National Weather Service Customer Satisfaction Survey

Hydrologic Services Program

Final Report 2004

CFI Group
Claes Fornell International

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Introduction

Introduction

This report presents the results from the 2004 National Weather Service Hydrologic Services customer satisfaction survey. The results presented in this report serve as a decision tool for use in conjunction with other customer and management information available to the National Weather Service Hydrologic Services Program.

The "Research Summary" section provides a discussion of the survey process and outlines the major findings from the analysis. The conclusions and recommendations that end the Research Summary give recommendations about how NWS managers may most effectively act on these findings. Following these are sections including further detail on survey results, verbatim customer comments, and the questionnaire in both English and Spanish.

Analysis Methodology

The analytical methodology used to evaluate the survey results is consistent with that used in the American Customer Satisfaction Index (ACSI). The ACSI (www.theACSI.org), established in 1994, is a uniform, cross-industry measure of satisfaction with goods and services available to U.S. consumers, including both the private and public sectors. It is produced by the National Quality Research Center at the University of Michigan Business School under the direction of Dr. Claes Fornell.

CFI Group, a management consulting firm that specializes in the application of the ACSI methodology to individual organizations, uses the ACSI methodology to identify the causes of customer satisfaction and relates satisfaction to organizational performance measures such as the rate of customer complaints and customer confidence in the service they receive. The methodology measures quality, satisfaction, and performance, and links them within a structural equation model using a Partial Least Squares methodology. By using this system, CFI Group's analysis overcomes customers' inherent difficulty to precisely report the relative effects of the many factors influencing their satisfaction. Using CFI Group's results, organizations can identify those factors that will most improve customer satisfaction and other measures of organizational performance.

The heart of the CFI Group methodology is the Customer Satisfaction Model, found on the next page. The model flows from left to right in a chain of cause-and-effect. On the far left side are **Attributes** - actual questions about various aspects of the NWS Hydrologic Services Program's performance from the survey itself. These roll up into **Components** representing general areas of performance that drive **Customer Satisfaction**. The **Customer Satisfaction Index (CSI)** is measured separately by three questions - overall satisfaction, satisfaction compared to expectations, and satisfaction compared to an "ideal." The CSI is a leading indicator of the organizational **Performance Outcomes**, which include the percentage of respondents saying that

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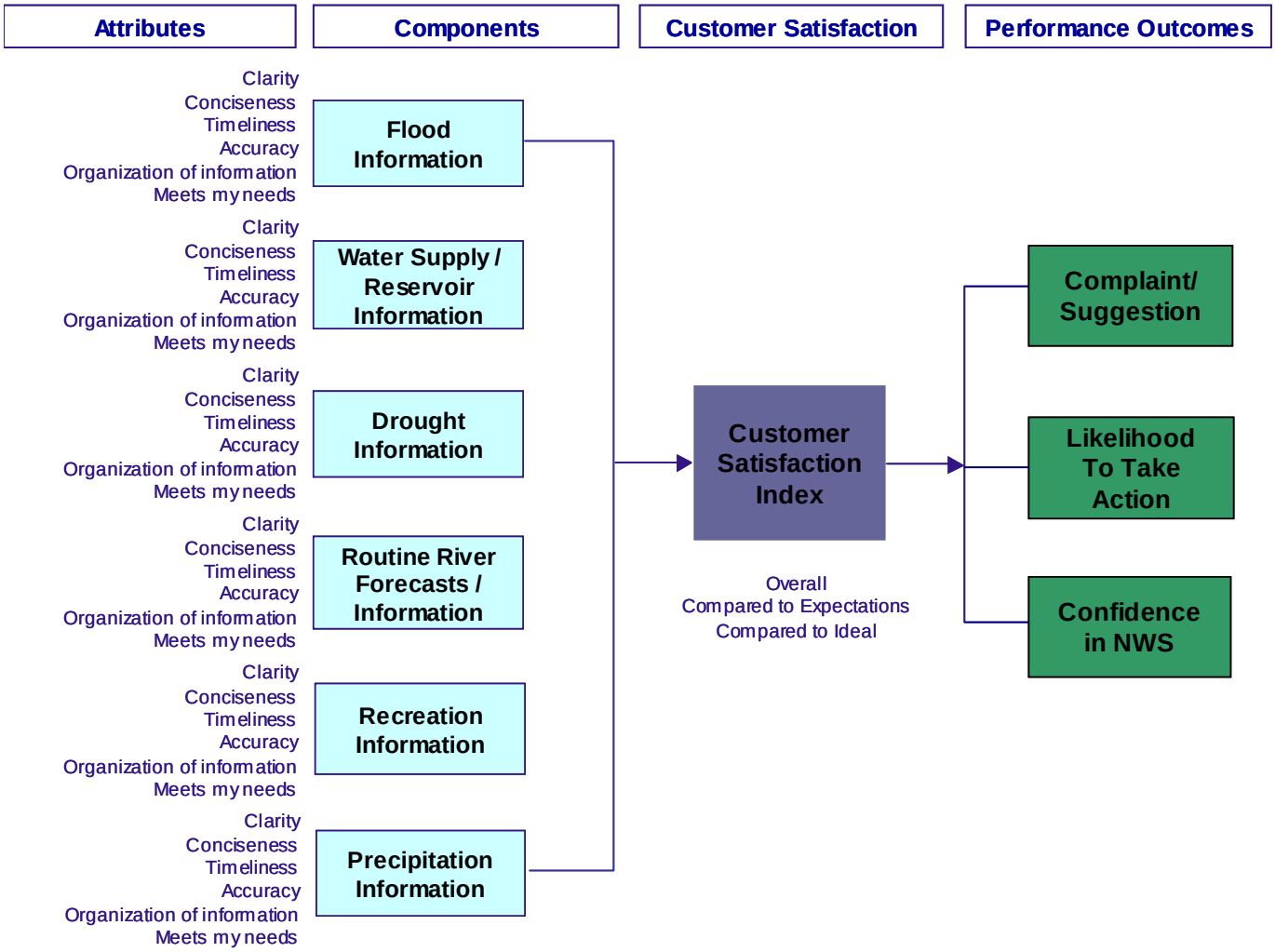
they have reported a problem or made a suggestion with regard to the NWS hydrologic products and services, respondents' confidence that the NWS will do a good job of providing forecasts, watches and warnings in the future, and their likelihood to take action based on the hydrologic information they receive from the National Weather Service.

The results presented in this report precisely quantify both current levels of performance on all the model elements, and the predicted impacts of quality and satisfaction improvements on performance outcomes. As the NWS Hydrologic Services Program improves its performance on Attributes and Components, the CSI will increase, resulting in improved outcomes. The analysis results help to pinpoint the areas of greatest leverage to drive these desirable outcomes, and thus serve as the springboard for NWS to develop successful and cost-effective strategies to continue to satisfy its customer base.



Introduction continued

Key Words for Understanding this Report

Results from this analysis are presented through various discussions, charts, and tables provided in this report. To understand these clearly, some definitions are in order:

Attribute – Attributes reflect different aspects or qualities of a component experienced by customers, which may contribute to satisfaction. Each attribute is captured by a specific scaled question from the questionnaire.

Attribute Rating – An attribute rating is the average of all responses to each question. Each rating has been converted to a 0-100 scale. In general, it indicates how negatively (low ratings) or positively (high ratings) customers perceive specific issues.

Component – Each component is defined by a set of attributes that are conceptually and empirically related to each other. For example, a component entitled "Flood Information" may include questions regarding "clarity" and "conciseness" of flood information.

Component Score (or simply "score") **–** A component score represents that component's "performance". In general, they tell how negatively (low scores) or positively (high scores) customers feel about the organization's performance in general areas. Quantitatively, the score is the weighted average of the attributes that define the component in the CFI Group model. These scores are standardized on a 0-100 scale.

Component Impact (or simply "impact") **–** The impact of a component represents its ability to affect the customer's satisfaction and future behavior. Components with higher impacts have greater leverage on measures of satisfaction and behavior than those with lower impacts. Quantitatively, a component's impact represents the amount of change in Overall Satisfaction that would occur if that component's score were to increase by 5 points.

Research Summary

Research Summary

Background

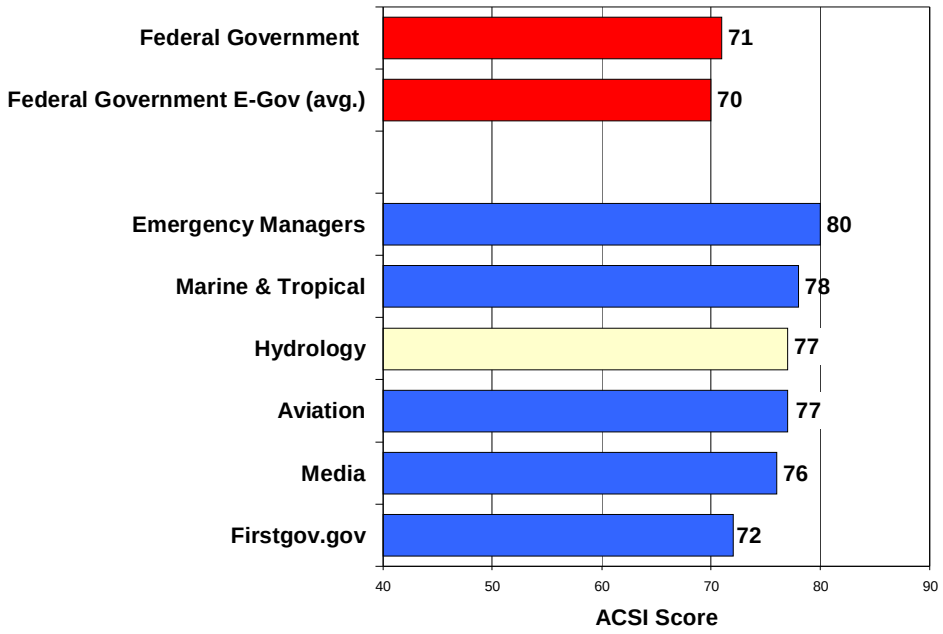
The project began with discussions between CFI Group and members of the NWS Hydrologic Services Program to establish the goals of the survey and the subsequent analysis. The 2004 survey was conducted in order to gain a better understanding of customer satisfaction with respect to the different types of information currently provided by the Hydrologic Services Program, as well as to gauge demand for additional information types and formats.

The survey was conducted via the web, September 13 – October 6, 2004. The NWS provided the survey link to various customers. The survey was also posted on NWS web pages. During the survey period, 2,345 responses were collected for the English version of the survey, and 7 responses were collected for the Spanish version. The majority of the respondents were Personal Users (40%), and Emergency Management (27%).

Research Summary continued

2004 Results

The NWS Hydrologic Services Program overall customer satisfaction score is 77. This is a very strong score, which can be illustrated by the benchmarking provided in the chart below. Hydrology far surpasses the overall CSI score for the Federal Government at 71, and is in line with all of the other studies conducted for the NWS in 2003, including Emergency Managers, Marine % Tropical, Aviation and Media. Firstgov.gov has been provided as a benchmark, given that it is a government website. Hydrology also outscores the ACSI average across all industries, which is 74.



Research Summary continued

The Hydrologic Services Program Customer Satisfaction Model

The Hydrologic Services Program customer satisfaction model appears on the following page. It is constructed of three sections: drivers of satisfaction (also called 'components'), satisfaction, and performance measures. Performance outcomes represent the desired outcomes of increasing satisfaction. The desired behaviors, again, are a decreased need for customers to report a problem or make a suggestion with regard to the NWS hydrologic products and services, increased confidence that the NWS will do a good job of providing forecasts , watches and warnings in the future, and increased likelihood to take action based on the hydrologic information received from the NWS.

Analysis of empirical data from the satisfaction model gives rise to two types of quantitative results: *"scores"* and *"impacts"*. A component, satisfaction, or performance outcome **score** is the weighted average of the individual ratings given by each respondent to the survey questions. A score is a relative measure of performance for a component, as given for a particular set of respondents. Scores can range anywhere between "0" and "100". In most cases, scores are not measured directly but are empirically derived from a series of underlying questions ("attributes") in the survey. There is no "unit of measure" associated with scores; it never represents a percentage of respondents. Rather, the score is best thought of as an index, with "0" meaning "poor" and "100" meaning excellent. The scale is relative, such that 72 is higher than 68, which is higher than 62, and so on.

Impacts represent the change in satisfaction and/or ensuing performance measures that would occur given a change in a component or satisfaction score. Mathematically, an impact is equivalent to the predicted change in Customer Satisfaction that would result from a 5-point change in a driver. Similarly, a 5-point change in Satisfaction would move performance outcome measures by the amount of the impact. For example, if the score of 81 for *Flood Information* were to increase by 5 points to 86, Satisfaction would increase by the amount of the impact, or 1.7 points. Likewise, if Satisfaction were to increase by 5 points from 77 to 82, Likelihood to take Action would improve from 87 to 89.4. Impacts are relative to one another and are additive. If NWS were to improve *Flood Information* and *Precipitation Information* each by 5 points, Customer Satisfaction would improve by 2.8 points. Components with higher impacts are generally recommended for improvement first. A low or "zero" impact does not mean a component is unimportant. Rather, it means that a five-point change in that one component is unlikely to result in improvement in the target variable at this time.

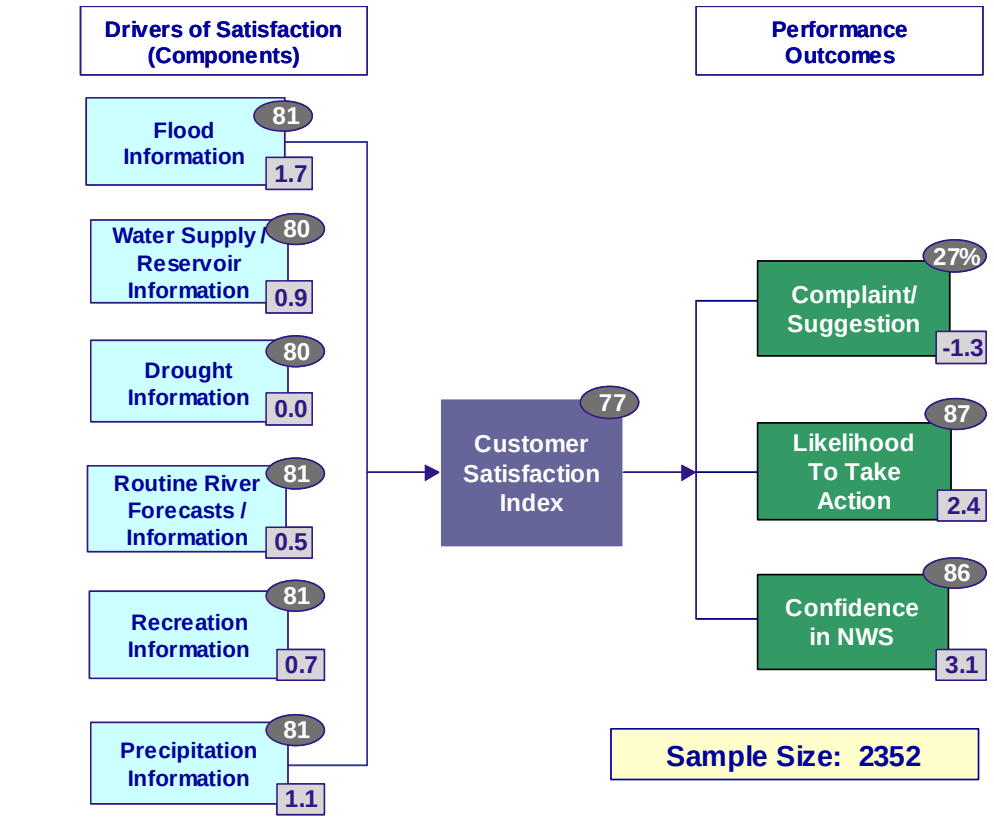
Research Summary continued

Note that the CSI, at 77, is lower in score than any of its drivers. Again, the Customer Satisfaction Index (CSI) is measured independently of the components with three survey questions (overall satisfaction, satisfaction compared to expectations, and satisfaction compared to an "ideal"); it is not an average of the scores for the model components themselves. By including expectations and ideal in the index measure of Satisfaction, we create a 'higher standard' for Satisfaction relative to the components, which measure specific performance items. As a result, we often see the CSI score lower than the individual component scores.

The key point to keep in mind is not how the score levels relate to one another, but rather that improvements in the Satisfaction drivers will lead to increases in Customer Satisfaction, regardless of score levels.

Research Summary continued

NWS Hydrologic Services Program Customer Satisfaction Model



Scores The performance of each component on a 0 to 100 scale. Component scores are made up of the weighted average of the corresponding survey questions.

Impacts The change in target variable that results from a five point change in a component score. For example, a 5-point gain in Flood Information would yield a 1.7-point improvement in Satisfaction.

Research Summary continued

Drivers of Satisfaction (Components)

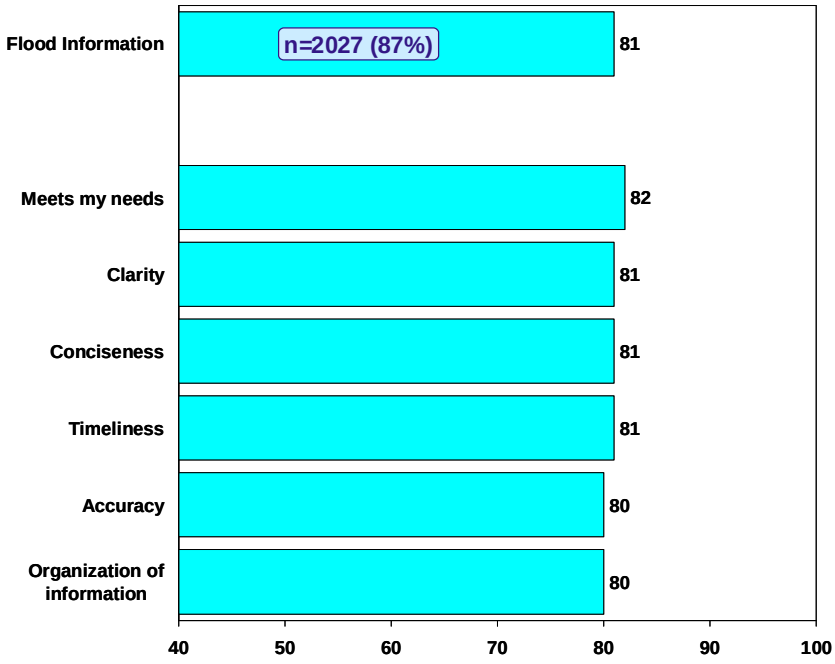
Overall, there is very little score differentiation between the various components, all score very high at either 80 or 81. This indicates that customers view the information they receive from the NWS Hydrologic Services Program with a high degree of satisfaction. Because the scores are so similar, it also suggests that customers many not necessarily differentiate between the various types of information they receive. This begs the question whether the average customer makes a distinction between flood and precipitation information.

Scores were lower among some segments of the population, most notably 'partners'/consultants who use the NWS data to provide their own custom services, but also Natural Resource Managers and those in the agriculture industry. Additionally, customers with a larger geographic scope of responsibility tend to be less satisfied.

Research Summary continued

Flood Information

Flood Information is among the three highest scoring components at 81, and has the highest impact at 1.7. As can be seen, all attributes score fairly close to one another, with 'meets my needs' scoring the highest at 82. Given that this component is high scoring, it is recommended that the NWS work to maintain present levels of support to ensure that the quality of flood information remains high so that satisfaction scores do not drop.

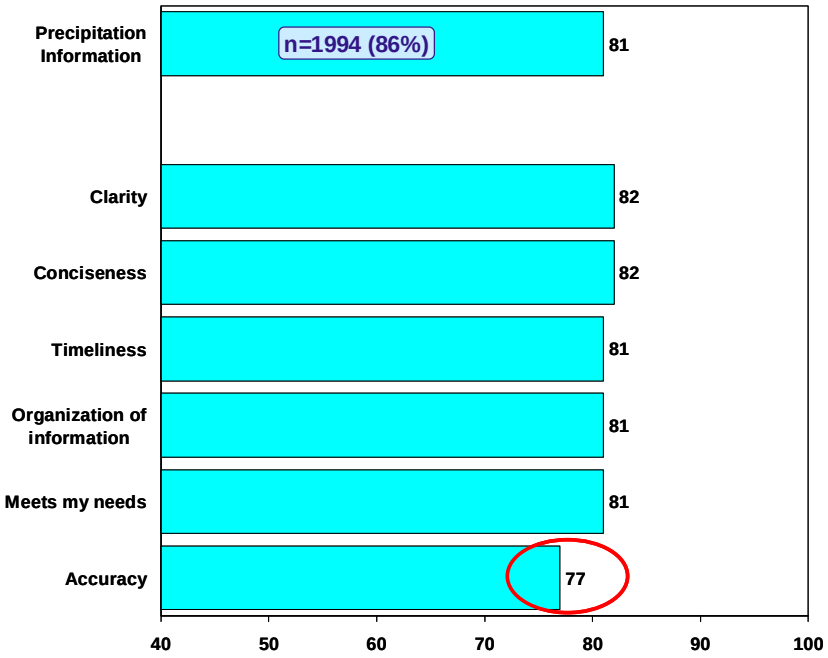


Respondents were also provided descriptions of flood severity categories used by the NWS, including minor, moderate, major flooding. 90% of respondents indicated that they were familiar with the terms, and also rated the usefulness of these flood severity categories in interpreting the impact of river flooding high at an 83.

Research Summary continued

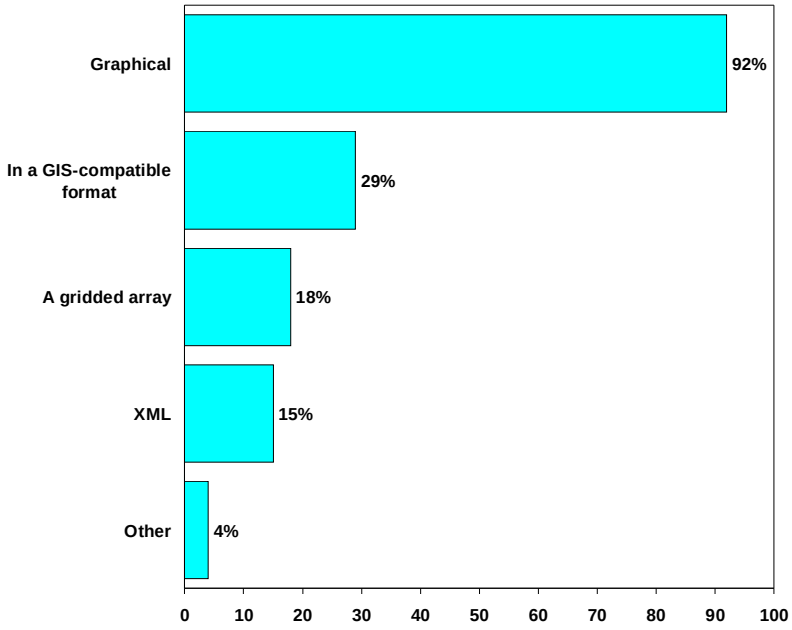
Precipitation Information

Precipitation also scores an 81 and has the second highest impact (1.1). As will be shown in the segment analysis later on in the report, Flood and Precipitation Information were also the most accessed types of hydrologic information obtained from the NWS. All of the attributes score at an 81 or 82, with the exception of 'accuracy' at a 77, the lowest of all attributes in the model. While there are factors beyond the control of the NWS when reporting weather related information, anything that could be done to improve customers' perceptions of accuracy would be beneficial.



Research Summary continued

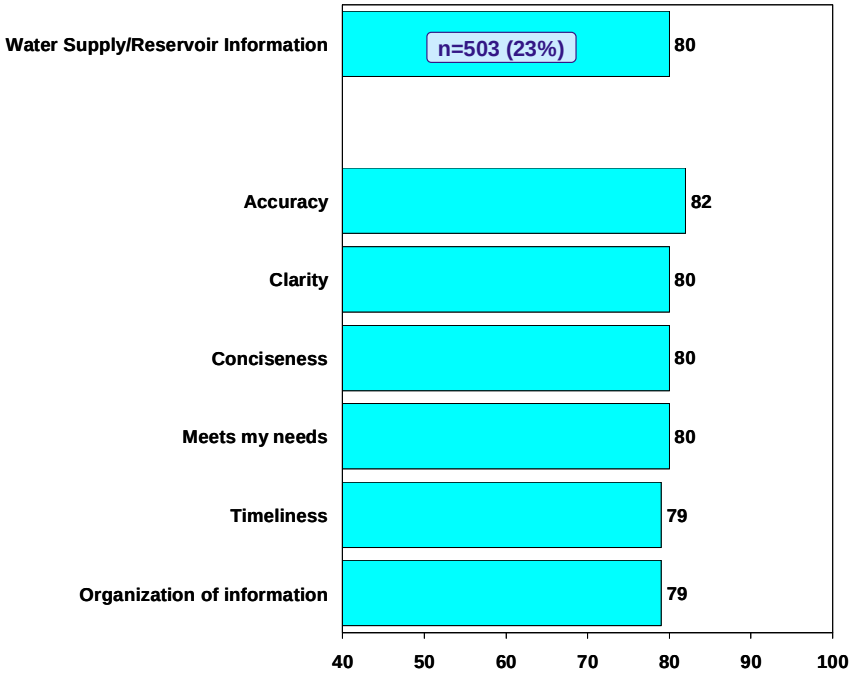
Respondents were asked to select their preferred format(s) for quantitative precipitation information, and were allowed to select all that apply. As the chart below indicates, the vast majority (92%) prefers a graphical format, and 29% prefer it in a GIS-compatible format. Listening to the needs of the customer and presenting precipitation information in these formats will continue to help keep the component score strong.



Research Summary continued

Water Supply/Reservoir Information

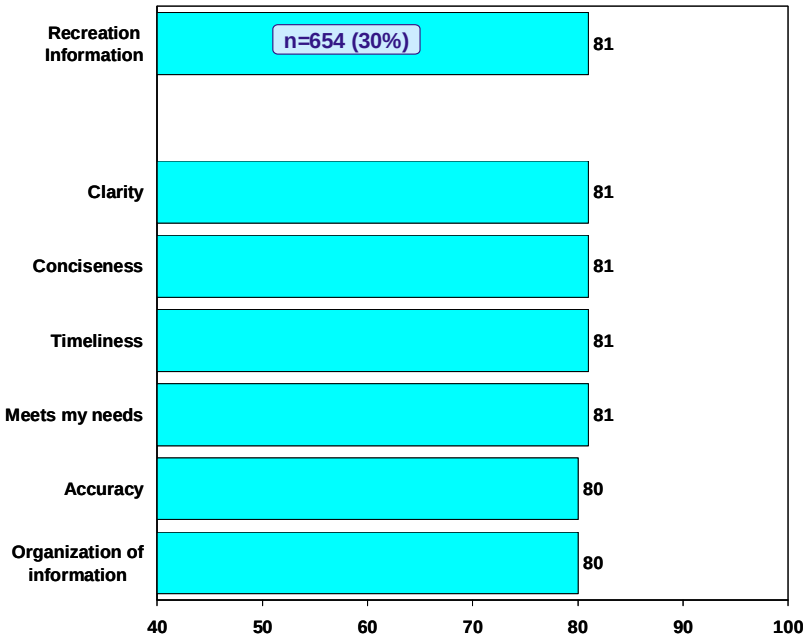
This component has the next highest impact at 0.9, still relatively strong, with an overall score of 80. However, far fewer respondents use this type of information relative to Precipitation and Flood data. The scores range a bit more within the attributes, from 79 for 'organization of information' and 'timeliness' to 82 for 'accuracy'. While 79 is a relatively good score, this is a lower impact item affecting fewer customers. But if there are remaining resources to focus on this after addressing higher priority items, 'timeliness' and 'organization of information' are the place to begin improvement.



Research Summary continued

Recreation Information

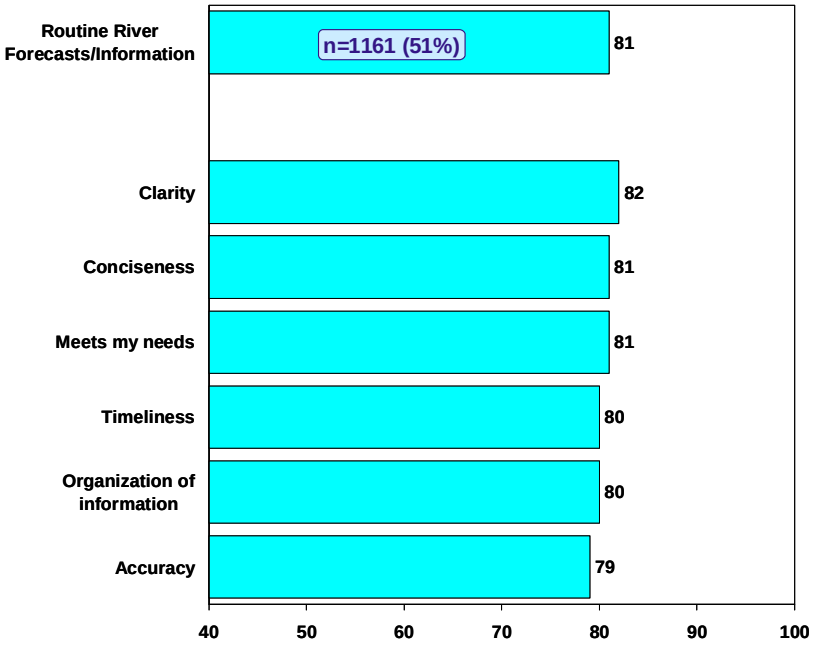
Recreation Information has the lowest impact (0.7) of all components. There should be a general focus on maintaining the existing quality of information provided.



Research Summary continued

Routine River Forecasts/Information

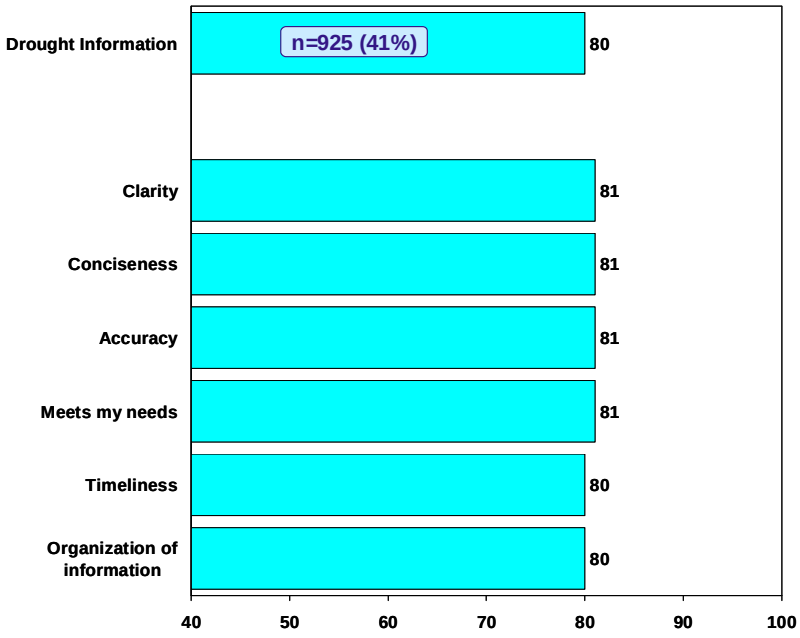
The Routine River Forecasts/Information component also scores an 81, but has a relatively low impact at 0.5. As was the case with Water Supply/Reservoir Information, scores range a bit more for this component, from 79 for 'accuracy' to 82 for 'clarity'. If there is anything that can be done to strengthen the perception of the accuracy of the information provided for routine river forecasts, customer satisfaction would benefit overall. Additionally, to the extent that River Forecasts may influence Flood Information, improving River Forecasts may have an added benefit of improving Flood Information as well.



Research Summary continued

Drought Information

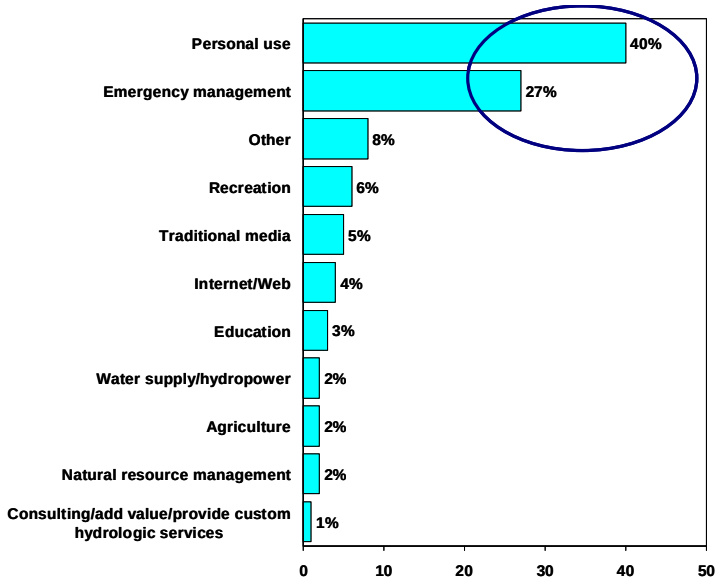
Lastly, the Drought Information component scores at an 80 and has a 0.0 impact. A 0.0 impact does not necessarily mean that drought information is not important to some NWS customers. As the table on page 40 shows, it does have an impact for the Western Region of 0.5. However, it is not a critical driver of satisfaction among most of the population.



Research Summary continued

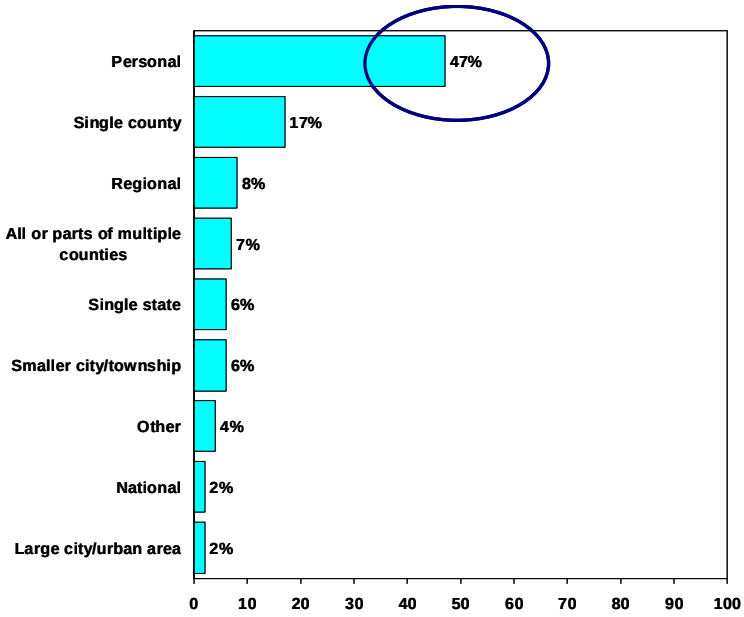
Segment Analysis

Respondents were asked to indicate their primary use for hydrologic information, or the commercial sector they represent. The majority (40%) indicated that they use the information for 'personal use' and 27% are members of Emergency Management.



Research Summary continued

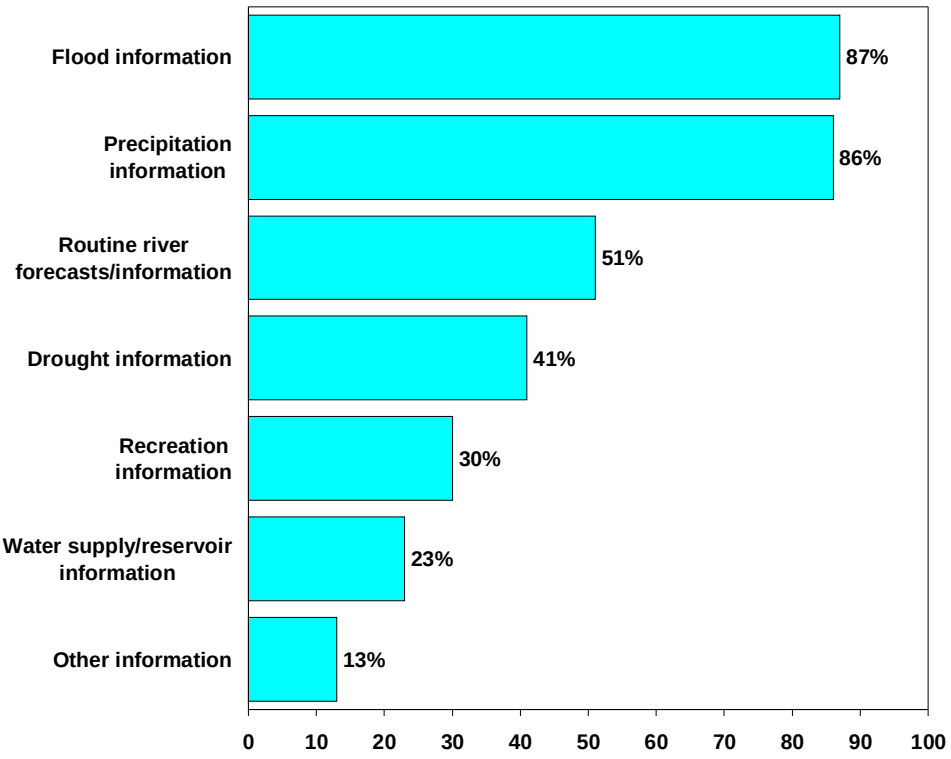
The majority of the respondents (47%) also indicated that their primary scope of responsibility is 'personal', with the next closest being 'single county' (17%).



According to the survey respondents, Emergency Management and Personal Users are the large users of hydrologic information. Different population segments have different weather needs, and NWS may wish to provide different 'products' for key segments.

Research Summary continued

Respondents were asked to indicate the types of information obtained from the NWS Hydrologic Services program. Multiple responses were allowed, and as the chart shows below, Flood and Precipitation Information dominate with 87% and 86% respectively. Routine River Forecasts/ Information follow (51%), and Drought Information (41%). Recall that these are also the highest impact items. Again, focusing on the quality of this information provided should be the priority for the NWS Hydrologic Services Program.



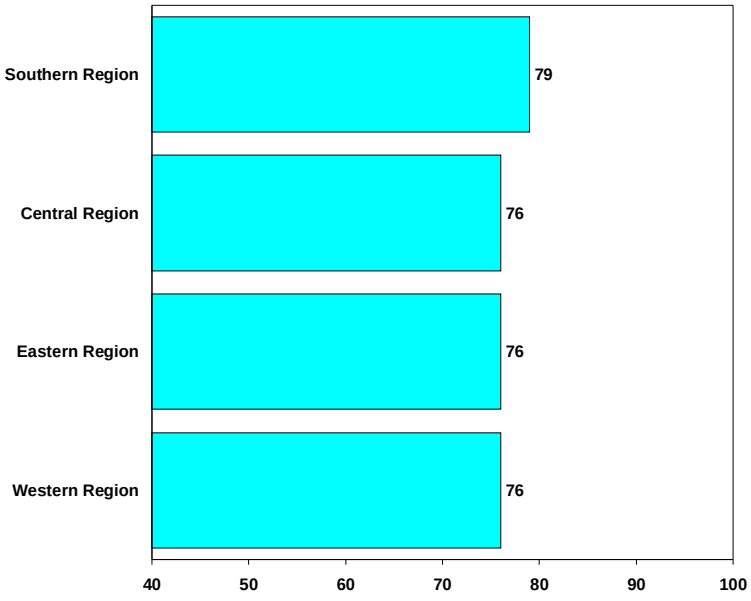
Research Summary continued

The partial table below (a complete table can be found on page 52) shows the largest respondent base, Emergency Management and Personal Use, and the types of information they obtain. Emergency Management accesses more information than the other groups. Efforts should potentially be made to understand this group's particular needs, and potentially offer different products and services for them relative to other segments. Additionally, when focusing efforts on making products "user friendly" for the general population, Flood and Precipitation information are the critical areas, with Recreation Information also important to Personal Users.

	Emergency Management	Personal Use	All Others	Total
Sample Size	**632**	**934**	**754**	**2352**
Flood information	97%	85%	83%	87%
Precipitation information	90%	84%	86%	86%
Routine river forecasts/information	66%	37%	56%	51%
Drought information	52%	31%	46%	41%
Recreation information	13%	40%	32%	30%
Water supply/reservoir information	27%	16%	28%	23%
Other information	10%	15%	14%	13%

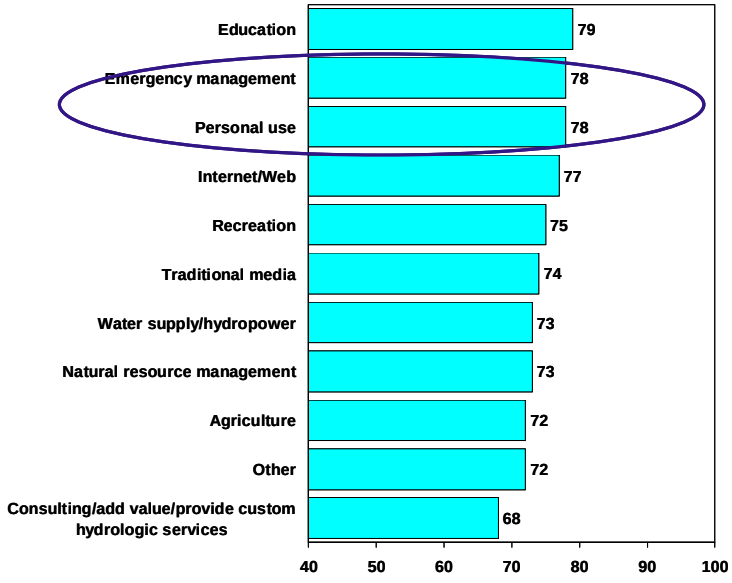
Research Summary continued

The next table shows customer satisfaction scores by region. The Southern Region is slightly more satisfied (79) than the other three regions. Given that this survey took place during one of the most challenging hurricane seasons in history, this is an indication that the NWS provided information when it mattered the most.



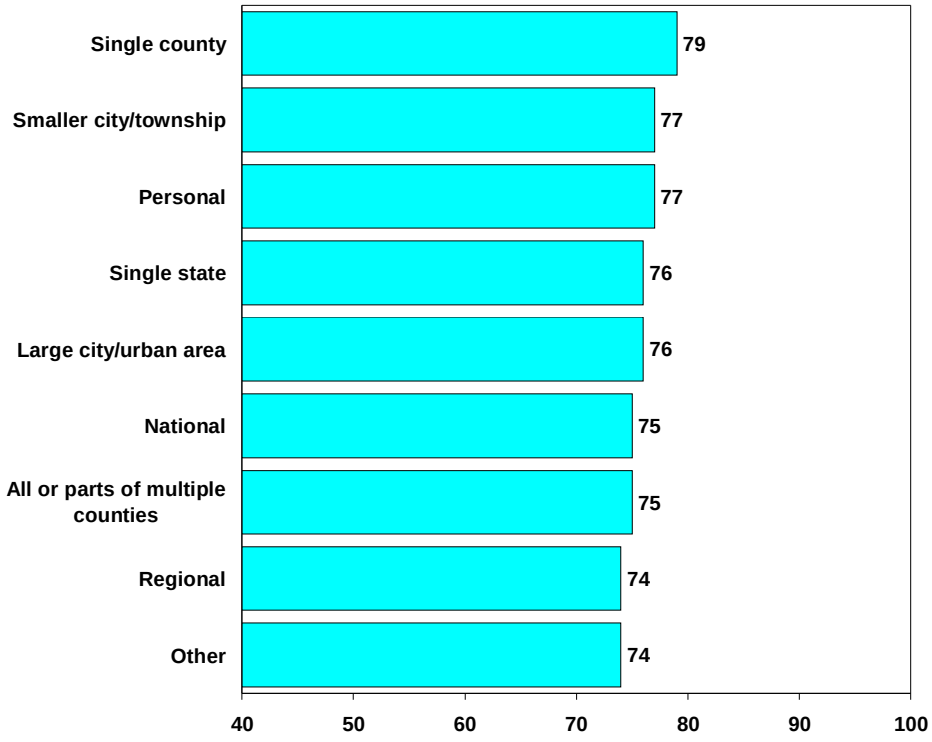
Research Summary continued

Taking a look at customer satisfaction scores by groups, the NWS is performing well for the most part, the highest users, Emergency Management and Personal Use are at the top (78), but others such as Water Supply/Hydropower (73) and Agriculture (72) are less satisfied. As the table which shows customer satisfaction by Emergency Management, Personal Use, and All Others on page 52 indicates, Emergency Management and Personal Use respondents are most satisfied (78) versus all others (74). Looking at impacts for these groups (again, see table on page 52), the highest impact item for Personal Use is Precipitation Information (1.9), while it is Flood Information (2.9) for Emergency Management, illustrating again that needs differ among groups.



Research Summary continued

Lastly, looking at customer satisfaction by primary scope, those with a larger scope of responsibility are slightly less satisfied, with National (75) versus Single County (79). The same holds true for the largest access group, Emergency Management. Emergency Managers with National responsibility scored a 72 for customer satisfaction while those with smaller city responsibility scored 77. Please note that the sample size for the Emergency Manager National group was only 14, so these scores should be used with caution. A complete table can be found on page 56.



Research Summary continued

Format/Graphics

Respondents were asked a series of questions regarding different data formats and graphics to give Hydrology a better idea of what areas to focus efforts in developing products going forward.

Format

Not surprisingly, customers prefer more information to less information. As the table below indicates, 'a combination of text and graphics' is preferred across the board when receiving information from the NWS, versus NOAA Weather Radio, text only or graphics only.

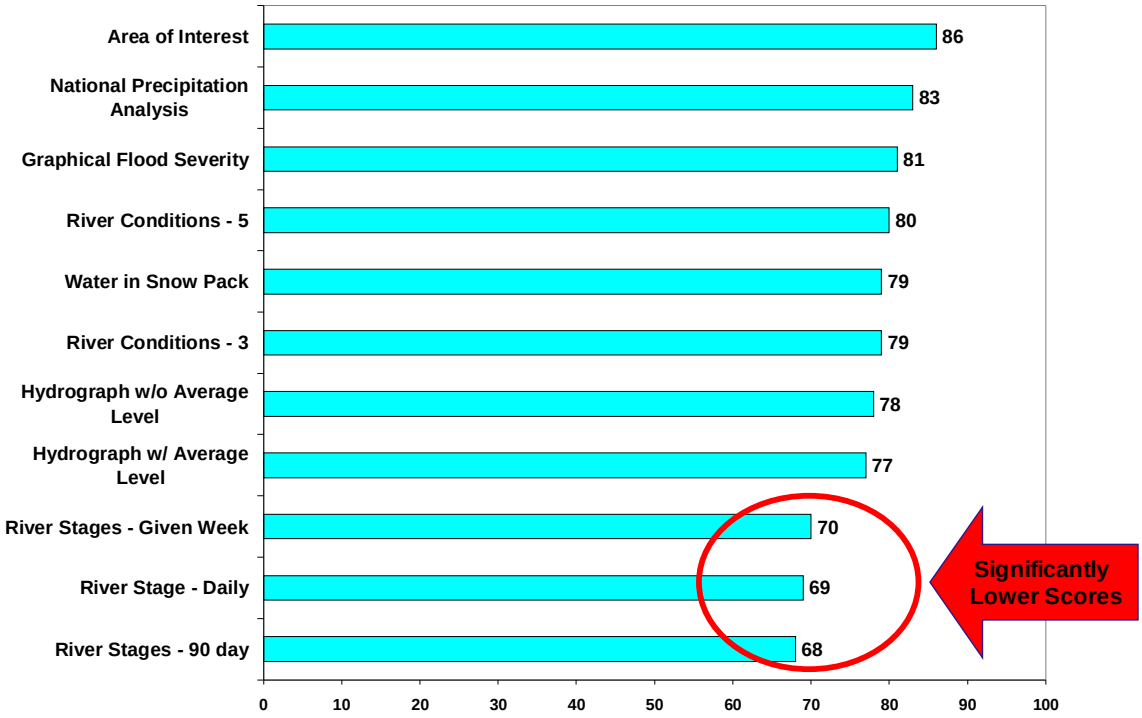
	Flash Flood/ Flood Warnings and Watches	River Forecasts	River/Stream Observations
Text	77	76	75
Graphics	78	77	77
A combination of text and graphics	**86**	**84**	**83**
NOAA Weather Radio	79	75	74

Respondents were also asked about preferences for additional access modes and data formats. In terms of additional access modes, respondents scored 'using a graphical web-based interface (e.g., menu) to select information for download' the highest (85), with 'query a data base' next (80), and with wholesale downloading the least preferred (67). A 'GIS compatible' is the preferred additional data format (81) over XML (75). Additionally, 46% of survey respondents now use or plan to use automated processing of hydrologic information.

Research Summary continued

Graphics

Survey respondents were asked to rate eleven graphics, scoring each for visual appeal, ease of understanding and whether it tells the respondent what s/he needs to know about the relevant information. An average was taken of the three scores to give benchmarks. The chart below shows how the graphics stack up against one another, with all graphics scoring well with the exception of the probability graphics, which score significantly lower than the others. Probability graphics were rated low even among the more sophisticated users, Emergency Managers.



It is clear through both the scores and customer verbatims that the simpler the graphical representation, the better. Data precision is important to customers, as is usability. As one respondent indicated "because we deal with the public on a daily basis, the information provided must be easily understood at a reading level of 4th grade". A full list of verbatim comments can be found beginning on page 65.

Listings of all the graphics scores can be found on page 64.

Research Summary continued

Conclusions & Recommendations

Hydrology's customer satisfaction score of 77 is strong, and shows that customers of the hydrologic services program are generally satisfied with the information they receive. Products and services also score high, either at 81 or 80, showing that customers view the information they receive from the NWS Hydrologic Services Program with a high degree of satisfaction.

One customer verbatim illustrates the commitment the NWS has to continuous improvement "I think that NWS is doing a great job of keeping up-to-date with its presentation of data. I think that the data is being presented in an easier to understand format than in the past." The information provided by Hydrology has a far-reaching impact on individuals.

Recommendations

Although scores are high, customers do express some frustration with the complexity of products within the verbatim comments. It is important to note that a "one size fits all" approach may not be best – some customers need more in-depth information than others. NWS needs to understand the needs of its key constituents as it makes improvements in products and services. Emergency Managers, partners and the general public may have very different – and conflicting – needs.

Following are target areas for improvement:

Internal Resource Assessment

Perceptions of the Hydrologic Services Program are mostly driven by Flood Information and Precipitation Information. These are the most accessed and highest impact items. It is recommended that improvement efforts be focused here first.

Targeting User Groups

Different consumer groups have different needs, as can be illustrated with the differing customer satisfaction scores for EMS vs. Personal Users vs. All Others. Hydrology might consider providing products made specifically for Emergency Managers and/or the general public so that information is provided in the most user-friendly manner for each key constituent.

Graphics Simplification

Simplify graphics where possible, particularly those related to uncertainty/probability information. Visual representation is important, as 92% receive text-based products via the web. As the scores indicate, the Uncertainty/Probability graphics are less clear and therefore do not provide information as well as other graphics. It is recommended that these be revised.

Research Summary continued

Spanish Speaking Population

The low response rate to the Spanish version of the survey suggests that the Spanish speaking population may be getting hydrologic information from sources other than the websites where the survey link was posted, or not getting hydrologic information at all. If the NWS wishes to get opinions of this population segment, a different means of reaching them is necessary.

Score Detail & Segmentation

Score & Impact Summary - All Customers

	Scores	Total Impacts
Flood Information n=2027	**81**	**1.7**
Clarity	81	
Conciseness	81	
Timeliness	81	
Accuracy	80	
Organization of information	80	
Meets my needs	82	
Water Supply/Reservoir Information n=503	**80**	**0.9**
Clarity	80	
Conciseness	80	
Timeliness	79	
Accuracy	82	
Organization of information	79	
Meets my needs	80	
Drought Information n=925	**80**	**0.0**
Clarity	81	
Conciseness	81	
Timeliness	80	
Accuracy	81	
Organization of information	80	
Meets my needs	81	
Routine River Forecasts/Information n=1161	**81**	**0.5**
Clarity	82	
Conciseness	81	
Timeliness	80	
Accuracy	79	
Organization of information	80	
Meets my needs	81	
Recreation Information n=654	**81**	**0.7**
Clarity	81	
Conciseness	81	
Timeliness	81	
Accuracy	80	
Organization of information	80	
Meets my needs	81	
Precipitation Information n=1994	**81**	**1.1**
Clarity	82	
Conciseness	82	
Timeliness	81	
Accuracy	77	
Organization of information	81	
Meets my needs	81	
Customer Satisfaction Index n=2311	**77**	
Overall satisfaction with the NWS Hydrologic Services Program	82	
How well NWS Hydrologic Services Program meets your expectations	74	
How NWS Hydrologic Services Program compares to an 'ideal' hydrologic services progra	74	

Contact NWS	**27%**	**-1.3**
Contacted the National Weather Service to report a problem or make a suggestion	27%	
Contact NWS Responsiveness	**78**	**--**
Responsiveness of the NWS personnel to your problem or suggestion	78	
Likelihood to Take Action	**87**	**2.4**
Likelihood to take action based on the hydrologic information you receive from the NWS	87	
Confidence in NWS	**86**	**3.1**
How confident are you that the NWS Hydrologic Services Program will do a good job of pr	86	

Score Summaries - by Region

	Central Region	Total Impact	Eastern Region	Total Impact	Southern Region	Total Impact	Western Region	Total Impact	Alaska Region
Sample Size	427		606		508		308		21
Flood Information	80	2.3	79	2.6	83	1.7	80	0.9	78
Clarity	80		81		83		81		81
Conciseness	80		80		83		79		79
Timeliness	80		79		83		81		81
Accuracy	80		78		82		78		77
Organization of information	80		78		82		78		77
Meets my needs	82		80		84		81		72
Water Supply/Reservoir Information	79	1.5	80	1.2	82	1.2	80	0.0	91
Clarity	80		81		81		80		94
Conciseness	79		80		82		79		89
Timeliness	78		78		80		79		89
Accuracy	82		83		82		80		89
Organization of information	75		80		81		80		89
Meets my needs	79		79		82		81		94
Drought Information	78	0.0	81	0.0	83	0.0	78	0.5	82
Clarity	78		82		83		78		78
Conciseness	78		81		83		78		75
Timeliness	79		80		83		77		81
Accuracy	79		81		83		77		81
Organization of information	78		80		83		78		86
Meets my needs	78		81		83		80		94
Routine River Forecasts/Information	82	0.0	79	0.8	83	0.5	80	0.0	78
Clarity	82		82		84		81		75
Conciseness	82		81		83		80		80
Timeliness	82		77		82		80		81
Accuracy	80		78		82		77		82
Organization of information	81		79		83		80		78
Meets my needs	83		79		83		81		73
Recreation Information	82	0.0	80	0.0	82	0.0	79	2.4	70
Clarity	83		80		82		79		75
Conciseness	82		80		83		79		73
Timeliness	82		81		81		80		81
Accuracy	82		78		81		77		76
Organization of information	80		79		81		80		71
Meets my needs	83		80		82		80		58
Precipitation Information	81	1.0	80	0.4	84	1.7	79	0.5	74
Clarity	82		82		86		81		73
Conciseness	81		82		84		80		75
Timeliness	81		80		83		80		80
Accuracy	77		76		81		77		74
Organization of information	81		80		84		79		75
Meets my needs	81		80		84		79		68
Customer Satisfaction Index	76	--	76	--	79	--	76	--	75
Overall satisfaction with the NWS Hydrologic Services Program	81		80		83		81		80
How well NWS Hydrologic Services Program meets your expectations	74		73		75		73		70
How NWS Hydrologic Services Program compares to an 'ideal' hydrologic services prod	73		72		76		73		68
Contact NWS	29	-0.9	26	-1.6	25	-1.2	36	-1.6	38
Contacted the national Weather Service to report a problem or make a suggestion	29		26		25		36		38
Contact NWS Responsiveness	85	--	73	--	77	--	77	--	76
Responsiveness of the NWS personnel to your problem or suggestion	85		73		77		77		76
Likelihood to Take Action	85	2.6	87	2.1	88	2.7	87	2.4	83
Likelihood to take action based on the hydrologic information you receive from the NWS	85		87		88		87		83
Confidence in NWS	86	3.0	85	3.3	87	3.2	85	2.9	86
How confident are you that the NWS Hydrologic Services Program will do a good job of	86		85		87		85		86

Score Summaries - by Region continued

NWS Demographics Valid Percent	Central Region	Eastern Region	Southern Region	Western Region	Alaska Region
What is your primary use of hydrologic information provided by the NWS or what commercial sector do you represent?					
Emergency management	31%	26%	26%	36%	29%
Traditional media	7%	4%	5%	4%	0%
Internet/Web	4%	4%	4%	4%	5%
Water supply/hydropower	2%	1%	2%	3%	0%
Agriculture	2%	1%	1%	2%	0%
Shipping	0%	1%	1%	0%	0%
Natural resource management	1%	2%	2%	5%	14%
Consulting/add value/provide custom hydrologic services	0%	2%	1%	1%	0%
Education	3%	1%	4%	1%	0%
Recreation	5%	7%	5%	6%	29%
Personal use	36%	43%	42%	28%	5%
Other	8%	8%	7%	10%	19%
What is the primary scope of your responsibility?					
National	2%	2%	3%	3%	5%
Regional	9%	8%	7%	7%	5%
Single state	4%	5%	5%	12%	33%
All or parts of multiple counties	7%	6%	10%	9%	5%
Single county	23%	17%	15%	19%	0%
Large city/urban area	2%	1%	2%	5%	0%
Smaller city/township	7%	6%	6%	6%	0%
Personal	43%	50%	48%	34%	38%
Other	3%	5%	4%	5%	14%
Which of the following types of hydrologic information do you obtain from the NWS?					
Flood information	87%	90%	89%	86%	76%
Water supply/reservoir information	15%	22%	24%	34%	10%
Drought information	44%	41%	41%	46%	19%
Routine river forecasts/information	51%	54%	44%	58%	86%
Recreation information	31%	29%	27%	30%	38%
Precipitation information	88%	88%	86%	87%	86%
Other information	11%	14%	16%	14%	24%
By what means do you receive text-based NWS hydrology products (e.g.) flood warnings?					
NWS Web pages	93%	93%	93%	92%	95%
Non-NWS Web pages	22%	29%	21%	20%	24%
Phone	15%	12%	13%	21%	19%
NOAA Weather Radio	63%	51%	55%	49%	48%
NOAA Weather Wire	9%	4%	5%	4%	0%
Family of Services (FOS)	3%	2%	2%	1%	0%
Emergency Managers Weather Information Network (EMWIN)	20%	16%	16%	17%	5%
Local or cable TV	61%	61%	65%	47%	38%
Commercial Radio	43%	35%	33%	34%	29%
Private Vendor	11%	9%	7%	6%	0%
Other	9%	8%	10%	16%	10%
Are you familiar with the way these terms (minor, moderate, major flooding) are used by the NWS in their flood warnings?					
Yes	91%	90%	91%	87%	100%
No	9%	10%	9%	13%	0%
Do you now use or do you plan to use automated processing of hydrologic information?					
Yes	48%	44%	48%	49%	48%
No	52%	56%	52%	51%	52%
Currently use the combined NWS rain gauge and radar data within the national precipitation analysis?					
Yes	60%	55%	65%	53%	30%
No	40%	45%	35%	47%	70%
In what format(s) would you like to receive quantitative precipitation information?					
Graphical	95%	94%	92%	90%	86%
A gridded array	21%	18%	18%	17%	0%
In a GIS-compatible format	30%	29%	28%	35%	38%
XML	14%	16%	16%	16%	10%
Other	2%	5%	4%	6%	5%
Uses national analysis of the amount of water in the snow pack?					
Yes	39%	31%	16%	39%	48%
No	61%	69%	84%	61%	52%
In what format(s) would you like to receive snow water equivalent information?					
Graphical	91%	87%	81%	86%	86%
A gridded array	18%	15%	10%	18%	0%
In a GIS-compatible format	26%	25%	19%	31%	33%
XML	11%	14%	12%	13%	5%
Other	3%	4%	5%	6%	5%

Score Summaries - by Region continued

NWS Scores for Graphics	Central Region		Eastern Region		Southern Region		Western Region		Alaska Region	
Please rate the following formats of receiving flash flood/flood warnings and watches from the NWS.										
Text	77		76		79		73		71	
Graphics	78		78		80		74		71	
A combination of text and graphics	85		86		87		84		84	
NOAA Weather Radio	81		79		80		73		73	
Please rate the following formats of receiving river forecasts from the NWS.										
Text	76		75		78		75		70	
Graphics	76		77		78		75		69	
A combination of text and graphics	83		83		84		83		79	
NOAA Weather Radio	77		76		77		70		70	
Please rate the following formats of receiving river/stream observations from the NWS.										
Text	75		74		77		73		69	
Graphics	75		77		78		75		73	
A combination of text and graphics	81		83		83		82		84	
NOAA Weather Radio	75		75		75		68		69	
Please rate the usefulness of these flood severity categories (minor, moderate, major flooding) in interpreting the impact of river flooding.										
The usefulness of these flood severity categories in interpreting the impact of river flood	83		83		84		82		82	
Graphical Flood Severity Map										
Visual appeal	79		77		80		78		74	
Ease of understanding	80		80		82		82		76	
Tells me what I need to know about flood severity	83		82		84		81		76	
Additional Access Modes										
Using a graphical Web-based interface (e.g., menu) to select information for download	81		86		85		86		84	
Query a data base	78		80		81		80		81	
Wholesale downloading of information	66		69		67		66		66	
Data Formats										
XML	73		76		77		70		64	
In a GIS compatible format	79		82		81		80		73	
River Conditions Map(5 categories)										
Visual appeal	79		78		81		79		72	
Ease of understanding	81		81		82		81		73	
Tells me what I need to know about river conditions	80		80		81		78		71	
River Conditions Map(3 categories)										
Visual appeal	78		78		81		78		69	
Ease of understanding	81		81		83		81		71	
Tells me what I need to know about river conditions	77		77		81		76		64	
Area of Interest Map										
Visual appeal	85		85		87		84		81	
Ease of understanding	85		86		87		84		80	
Tells me what I need to know about river conditions	86		85		87		84		75	
Hydrograph without Average Level										
Visual appeal	75		77		78		77		74	
Ease of understanding	75		77		77		78		76	
Tells me what I need to know about river conditions	78		79		78		80		71	
Hydrograph with Average Level										
Visual appeal	74		77		77		75		74	
Ease of understanding	75		77		77		78		74	
Tells me what I need to know about river conditions	77		78		78		79		69	
National Precipitation Analysis Map										
Visual appeal	83		83		87		82		82	
Ease of understanding	82		82		86		80		69	
Tells me what I need to know about national precipitation	82		82		85		79		68	
Water in the Snow Pack Map										
Visual appeal	79		80		81		79		78	
Ease of understanding	77		77		79		76		70	
Tells me what I need to know about snow pack water amounts	77		78		80		76		71	
Uncertainty and Probability										
How useful would it be to have forecasts include uncertainty information	83		84		84		85		80	
How useful would it be to have forecasts include probability information	76		76		77		78		73	
Usefulness of providing information regarding uncertainty of river forecasts for short-terr	82		82		83		82		79	
Usefulness of providing information regarding uncertainty of river forecasts for long-term	75		75		78		76		65	
River Stages during a 90 day Forecast Period Graph										
Visual appeal	68		68		72		66		75	
Ease of understanding	62		64		67		65		61	
Tells me what I need to know about river stages	67		68		71		68		68	

Score Summaries - by Region continued

NWS Scores for Graphics	Central Region		Eastern Region		Southern Region		Western Region		Alaska Region	
River Stage during any Given Week over the next 90 days Graph										
Visual appeal	71		70		74		69		69	
Ease of understanding	68		67		72		68		64	
Tells me what I need to know about a given river stage	71		69		73		70		65	
River Stage on a Daily Basis Graph										
Visual appeal	69		68		72		69		73	
Ease of understanding	67		67		71		69		73	
Tells me what I need to know about a river stage	71		69		73		71		75	
100 Year Water Level										
How useful would it be to include the 100-year water level to characterize flooding in NW	70		71		73		75		74	

Score Summaries - by Primary Use

	Emergency management	Traditional media	Internet/Web	Water supply/ hydropower	Agriculture	Natural resource management	Consulting/add value/provide custom hydrologic	Education	Recreation	Personal use	Other
Sample Size	**632**	**117**	**82**	**42**	**39**	**51**	**21**	**59**	**149**	**934**	**182**
Flood information	**81**	**80**	**81**	**80**	**83**	**79**	**74**	**86**	**80**	**81**	**79**
Clarity	82	80	80	82	86	79	77	87	81	81	81
Conciseness	80	79	80	82	83	82	74	86	80	82	80
Timeliness	80	79	80	82	84	82	75	86	79	82	80
Accuracy	80	80	82	76	78	74	72	87	80	81	76
Organization of information	81	78	80	80	83	77	73	84	80	79	78
Meets my needs	81	82	81	77	84	81	77	87	82	83	78
Water Supply/Reservoir information	**82**	**81**	**85**	**77**	**73**	**80**	**81**	**78**	**73**	**80**	**77**
Clarity	82	85	81	76	69	83	83	81	74	80	78
Conciseness	81	85	85	78	70	83	78	82	76	80	78
Timeliness	81	79	81	79	75	77	80	79	71	80	73
Accuracy	84	84	90	75	74	78	80	81	77	83	77
Organization of information	82	79	85	78	71	80	76	72	73	79	77
Meets my needs	82	79	88	75	77	81	83	76	73	81	77
Drought information	**82**	**77**	**83**	**75**	**70**	**76**	**72**	**87**	**81**	**81**	**77**
Clarity	82	79	81	76	70	77	78	86	84	81	78
Conciseness	82	78	85	76	72	75	71	89	80	82	79
Timeliness	82	78	85	76	76	75	71	89	79	81	78
Accuracy	82	82	85	72	70	72	64	88	80	81	76
Organization of information	82	78	83	76	70	77	71	85	78	80	79
Meets my needs	83	75	83	74	70	79	68	86	84	82	77
Routine River Forecast/Information	**81**	**82**	**82**	**79**	**82**	**79**	**82**	**90**	**78**	**81**	**81**
Clarity	82	83	85	81	78	80	83	90	82	82	83
Conciseness	81	82	84	81	87	82	83	90	81	81	82
Timeliness	80	81	79	78	83	77	81	90	77	81	80
Accuracy	80	80	83	73	77	75	79	89	77	80	79
Organization of information	81	80	81	81	81	82	78	90	77	80	79
Meets my needs	80	84	80	76	84	78	82	91	78	82	80
Recreation information	**80**	**80**	**84**	**57**	**86**	**81**	**69**	**85**	**78**	**82**	**76**
Clarity	79	84	84	56	87	80	70	86	80	82	75
Conciseness	79	83	82	57	87	82	72	84	78	82	77
Timeliness	82	82	84	63	84	80	63	84	78	81	79
Accuracy	78	82	84	63	84	80	63	84	78	81	79
Organization of information	81	80	84	54	87	84	67	86	78	81	74
Meets my needs	81	79	86	48	87	82	70	86	78	83	74
Precipitation Information	**81**	**78**	**82**	**80**	**74**	**76**	**72**	**86**	**81**	**82**	**76**
Clarity	83	81	83	83	76	79	79	88	83	83	79
Conciseness	81	80	83	82	77	80	75	89	83	83	77
Timeliness	82	76	82	77	77	76	67	84	81	82	77
Accuracy	77	75	81	77	69	72	64	82	77	78	74
Organization of information	82	78	83	82	76	74	68	86	81	83	76
Meets my needs	80	77	82	79	72	72	68	86	82	83	75
Customer Satisfaction Index	**78**	**74**	**77**	**73**	**72**	**73**	**68**	**79**	**75**	**78**	**72**
Overall satisfaction with the NWS Hydrologic Services Program	83	79	81	78	77	80	76	85	81	82	77
How well NWS Hydrologic Services Program meets your expectations	75	72	75	68	71	67	61	74	70	75	68
How NWS Hydrologic Services Program compares to an "ideal" hydrologic services	75	70	74	70	70	70	62	75	73	75	68
Contact NWS	**45**	**35**	**21**	**64**	**18**	**58**	**43**	**31**	**13**	**11**	**32**
Contacted the national Weather Service to report a problem or make a suggestion	45	35	21	64	18	58	43	31	13	11	32
Contact NWS Responsiveness	**83**	**78**	**71**	**81**	**63**	**75**	**72**	**80**	**77**	**67**	**73**
Responsiveness of the NWS personnel to your problem or suggestion	83	78	71	81	63	75	72	80	77	67	73
Likelihood to Take Action	**88**	**88**	**86**	**83**	**81**	**84**	**83**	**88**	**87**	**87**	**87**
Likelihood to take action based on the hydrologic information you receive from the N	88	88	86	83	81	84	83	88	87	87	87
Confidence in NWS	**86**	**86**	**84**	**80**	**82**	**83**	**79**	**88**	**85**	**87**	**83**
How confident are you that the NWS Hydrologic Services Program will do a good jo	86	86	84	80	82	83	79	88	85	87	83

Score Summaries - by Primary Use continued

NWS Demographics	Emergency management	Traditional media	Internet/Web	Water supply /hydropower	Agriculture	Natural resource management	Consulting/add value/provide custom hydrologic	Education	Recreation	Personal use	Other
What is your primary use of hydrologic information provided by the NWS or what commercial sector do you represent?											
Emergency management	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Traditional media	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Internet/Web	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Water supply/hydropower	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%
Agriculture	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%
Natural resource management	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
Consulting/add value/provide custom hydrologic services	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Education	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
Recreation	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
Personal use	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
What is the primary scope of your responsibility?											
National	2%	3%	4%	0%	5%	2%	29%	7%	0%	1%	4%
Regional	4%	28%	15%	31%	8%	24%	29%	12%	9%	2%	19%
Single state	9%	4%	5%	31%	8%	43%	14%	14%	3%	1%	10%
All or parts of multiple counties	8%	37%	9%	19%	8%	12%	10%	3%	3%	2%	13%
Single county	50%	5%	4%	2%	13%	10%	5%	5%	1%	2%	13%
Large city/urban area	6%	3%	1%	12%	0%	0%	5%	2%	1%	0%	1%
Smaller city/township	15%	3%	4%	0%	0%	4%	5%	10%	1%	1%	5%
Personal	3%	15%	56%	0%	59%	2%	5%	34%	77%	89%	13%
Other	3%	2%	3%	5%	0%	4%	0%	12%	3%	1%	21%
Which of the following types of hydrologic information do you obtain from the NWS?											
Flood information	97%	97%	87%	86%	82%	92%	86%	80%	68%	85%	85%
Water supply/reservoir information	27%	30%	26%	60%	28%	41%	38%	24%	22%	16%	21%
Drought information	52%	67%	45%	74%	69%	65%	43%	54%	23%	31%	35%
Routine river forecasts/information	66%	41%	48%	76%	36%	88%	62%	39%	68%	37%	53%
Recreation information	13%	32%	28%	14%	18%	12%	33%	24%	73%	40%	19%
Precipitation information	90%	89%	85%	83%	92%	96%	100%	97%	77%	84%	85%
Other information	10%	6%	17%	10%	13%	10%	5%	17%	9%	15%	26%
By what means do you receive text-based NWS hydrology products (e.g.) flood warnings?											
NWS Web pages	90%	88%	95%	95%	90%	96%	95%	93%	95%	94%	90%
Non-NWS Web pages	25%	21%	35%	19%	18%	31%	43%	17%	18%	21%	25%
Phone	33%	12%	7%	29%	3%	16%	24%	2%	5%	2%	16%
NOAA Weather Radio	67%	45%	60%	26%	46%	39%	57%	51%	44%	50%	53%
NOAA Weather Wire	9%	31%	6%	0%	3%	4%	19%	5%	1%	1%	3%
Family of Services (FOS)	1%	11%	6%	0%	0%	0%	10%	5%	1%	0%	4%
Emergency Managers Weather Information Network (EMWIN)	40%	12%	21%	2%	5%	6%	19%	8%	5%	6%	12%
Local or cable TV	63%	30%	57%	38%	59%	57%	48%	59%	51%	65%	55%
Commercial Radio	39%	22%	40%	19%	38%	41%	29%	34%	24%	38%	33%
Private Vendor	16%	29%	7%	10%	3%	8%	5%	5%	3%	3%	5%
Other	16%	10%	5%	24%		14%	10%	7%	5%	4%	19%
Are you familiar with the way these terms (minor, moderate, major flooding) are used by the NWS in their flood warnings?											
Yes	95%	86%	93%	98%	82%	96%	100%	88%	89%	87%	88%
No	5%	14%	7%	2%	18%	4%	0%	12%	11%	13%	12%
Do you now use or do you plan to use automated processing of hydrologic information?											
Yes	55%	54%	49%	74%	36%	74%	71%	53%	37%	34%	52%
No	45%	46%	51%	26%	64%	26%	29%	47%	63%	66%	48%
Currently use the combined NWS rain gauge and radar data within the national precipitation analysis?											
Yes	64%	39%	58%	66%	54%	52%	65%	69%	54%	55%	61%
No	36%	61%	42%	34%	46%	48%	35%	31%	46%	45%	39%
In what format(s) would you like to receive quantitative precipitation information?											
Graphical	93%	93%	91%	95%	92%	90%	95%	95%	93%	93%	88%
A gridded array	17%	25%	29%	21%	21%	20%	29%	37%	16%	15%	20%
In a GIS-compatible format	51%	18%	27%	43%	8%	65%	38%	51%	21%	13%	34%
XML	15%	14%	33%	14%	3%	18%	19%	24%	14%	14%	18%
Other	2%	2%	7%	7%	3%	8%	14%	8%	4%	3%	8%
Uses national analysis of the amount of water in the snow pack?											
Yes	32%	24%	40%	45%	47%	37%	20%	38%	25%	29%	31%
No	68%	76%	60%	55%	53%	63%	80%	62%	75%	71%	69%
In what format(s) would you like to receive snow water equivalent information?											
Graphical	86%	92%	88%	83%	85%	82%	90%	86%	81%	87%	75%
A gridded array	13%	20%	23%	17%	13%	20%	29%	27%	11%	13%	15%
In a GIS-compatible format	43%	13%	27%	33%	5%	51%	33%	41%	15%	11%	24%
XML	12%	13%	29%	12%	0%	16%	19%	12%	11%	13%	14%
Other	3%	1%	7%	2%	3%	12%	10%	10%	3%	4%	7%

Score Summaries - by Primary Use continued

NWS Scores for Graphics	Emergency management	Traditional media	Internet/Web	Water supply/ hydropower	Agriculture	Natural resource management	Consulting/add value/provide custom hydrologic	Education	Recreation	Personal use	Other
Please rate the following formats of receiving flash flood/flood warnings and watches from the NWS.											
Text	79	80	79	70	70	71	74	73	72	77	74
Graphics	79	76	81	76	69	75	71	81	76	80	76
A combination of text and graphics	86	84	88	81	81	83	87	88	84	87	83
NOAA Weather Radio	80	73	80	71	79	78	65	77	79	80	76
Please rate the following formats of receiving river forecasts from the NWS.											
Text	77	79	79	74	70	73	77	76	73	76	74
Graphics	77	71	79	76	67	76	70	82	77	78	74
A combination of text and graphics	84	78	83	82	80	83	85	88	85	85	82
NOAA Weather Radio	77	67	76	66	78	72	65	76	73	77	75
Please rate the following formats of receiving river/stream observations from the NWS.											
Text	76	77	76	71	73	72	74	76	73	75	74
Graphics	77	76	82	76	75	75	76	81	78	78	75
A combination of text and graphics	84	78	87	80	81	83	85	85	84	84	81
NOAA Weather Radio	74	67	75	63	75	69	60	74	71	76	73
Please rate the usefulness of these flood severity categories (minor, moderate, major flooding) in interpreting the impact of river flooding.											
The usefulness of these flood severity categories in interpreting the impact of river f	84	83	80	81	83	81	79	87	83	84	82
Graphical Flood Severity Map											
Visual appeal	82	71	82	75	74	82	71	78	76	77	78
Ease of understanding	83	72	83	82	79	85	74	85	81	81	80
Tells me what I need to know about flood severity	83	76	86	80	76	86	77	85	83	84	80
Additional Access Modes											
Using a graphical Web-based interface (e.g., menu) to select information for downlo	86	81	84	82	79	88	82	88	89	85	83
Query a data base	80	76	88	81	64	75	78	84	75	82	82
Wholesale downloading of information	71	68	74	71	62	61	73	74	57	65	64
Data Formats											
XML	73	80	80	78	57	69	71	75	70	77	72
Arc GIS compatible format	86	74	78	85	83	86	67	88	70	75	81
River Conditions Map(5 categories)											
Visual appeal	79	76	81	79	72	79	76	86	77	79	77
Ease of understanding	80	77	85	84	75	82	77	88	79	81	78
Tells me what I need to know about river conditions	79	79	83	84	72	79	74	87	78	81	76
River Conditions Map(3 categories)											
Visual appeal	80	78	79	80	69	79	77	87	76	79	77
Ease of understanding	81	80	83	83	75	81	82	87	79	82	78
Tells me what I need to know about river conditions	79	79	79	80	69	76	67	84	75	79	73
Area of Interest Map											
Visual appeal	86	83	89	81	85	81	82	86	84	86	85
Ease of understanding	86	82	88	84	86	83	83	86	85	87	85
Tells me what I need to know about river conditions	85	83	87	84	85	82	79	86	85	87	84
Hydrograph without Average Level											
Visual appeal	79	74	79	82	68	84	80	80	79	75	77
Ease of understanding	78	73	82	85	72	85	83	81	81	75	78
Tells me what I need to know about river conditions	79	76	83	87	75	88	81	85	81	77	78
Hydrograph with Average Level											
Visual appeal	77	74	77	77	70	84	79	80	79	74	77
Ease of understanding	77	73	80	80	72	83	77	81	80	75	78
Tells me what I need to know about river conditions	78	76	81	82	74	84	77	84	82	77	78
National Precipitation Analysis Map											
Visual appeal	83	79	87	81	84	83	76	87	85	85	84
Ease of understanding	82	80	83	82	85	81	79	87	84	84	82
Tells me what I need to know about national precipitation	81	81	84	81	85	78	76	88	84	84	80
Water in the Snow Pack Map											
Visual appeal	80	75	81	81	78	81	77	85	80	80	78
Ease of understanding	77	74	82	79	79	81	76	84	79	79	76
Tells me what I need to know about snow pack water amounts	77	73	81	78	79	77	78	85	79	79	75
Uncertainty and Probability											
How useful would it be to have forecasts include uncertainty information	85	80	85	85	82	83	84	88	85	84	84
How useful would it be to have forecasts include probability information	78	65	78	72	78	77	79	82	76	77	75
Usefulness of providing information regarding uncertainty of river forecasts for shor	82	78	82	79	82	80	82	89	82	83	80
Usefulness of providing information regarding uncertainty of river forecasts for long	77	71	79	78	70	79	69	83	75	75	73
River Stages during a 90 day Forecast Period Graph											
Visual appeal	71	63	72	71	60	71	64	74	66	68	69
Ease of understanding	67	59	65	69	55	66	59	67	62	65	63
Tells me what I need to know about river stages	69	64	68	69	61	71	64	75	68	69	67

Score Summaries - by Primary Use continued

NWS Scores for Graphics	Emergency management	Traditional media	Internet/Web	Water supply/ hydropower	Agriculture	Natural resource management	Consulting/add value/provide custom hydrologic	Education	Recreation	Personal use	Other
River Stage during any Given Week over the next 90 days Graph											
Visual appeal	73	66	75	70	65	72	68	76	67	72	70
Ease of understanding	70	61	72	69	65	69	63	74	66	70	66
Tells me what I need to know about a given river stage	71	64	73	70	66	72	66	78	70	72	68
River Stage on a Daily Basis Graph											
Visual appeal	71	63	71	73	67	72	67	76	69	68	70
Ease of understanding	69	63	69	75	64	73	65	75	69	68	69
Tells me what I need to know about a river stage	71	65	72	74	68	74	72	79	73	71	70
100 Year Water Level											
How useful would it be to include the 100-year water level to characterize flooding a	74	70	76	81	72	85	80	79	70	69	73

Score Summaries - by Primary Scope of Responsibility

	National	Regional	Single state	All or parts of multiple counties	Single county	Large city/urban area	Smaller city/township	Personal	Other
Sample Size	**52**	**190**	**145**	**173**	**387**	**55**	**138**	**1094**	**93**
Flood Information	**78**	**79**	**81**	**81**	**82**	**81**	**80**	**81**	**79**
Clarity	77	80	80	81	83	83	81	81	82
Conciseness	76	79	81	82	82	83	79	81	80
Timeliness	78	78	83	80	81	83	79	82	78
Accuracy	80	78	81	80	81	76	79	80	78
Organization of information	77	76	77	80	83	82	80	79	78
Meets my needs	79	80	82	81	82	79	80	82	79
Water Supply/Reservoir Information	**79**	**80**	**82**	**79**	**84**	**82**	**75**	**78**	**77**
Clarity	78	81	81	78	84	85	77	79	77
Conciseness	77	81	81	79	83	87	73	79	78
Timeliness	75	79	81	77	83	74	72	79	76
Accuracy	79	80	83	81	85	78	76	82	77
Organization of information	75	80	81	78	83	84	73	78	76
Meets my needs	79	79	81	80	83	86	75	80	77
Drought Information	**79**	**76**	**81**	**78**	**83**	**80**	**84**	**80**	**82**
Clarity	76	79	82	79	82	84	84	80	83
Conciseness	81	77	81	80	82	79	83	80	80
Timeliness	78	76	81	78	83	78	83	80	84
Accuracy	78	76	80	79	83	79	84	81	83
Organization of information	76	76	82	79	83	86	83	79	81
Meets my needs	79	76	81	78	84	83	84	81	82
Routine River Forecasts/Information	**80**	**78**	**81**	**83**	**82**	**81**	**79**	**80**	**78**
Clarity	79	81	80	84	84	83	81	81	79
Conciseness	77	82	81	84	83	83	78	81	80
Timeliness	78	76	81	83	81	82	78	80	78
Accuracy	82	75	82	83	81	76	77	80	76
Organization of information	73	77	81	82	84	81	80	80	77
Meets my needs	81	79	81	82	82	81	79	81	76
Recreation Information	**76**	**76**	**83**	**78**	**82**	**78**	**83**	**81**	**81**
Clarity	74	79	82	79	82	79	83	81	81
Conciseness	71	78	81	80	81	82	82	81	79
Timeliness	75	76	84	78	84	70	84	82	84
Accuracy	68	76	85	80	80	71	81	80	83
Organization of information	79	75	83	79	82	83	85	80	81
Meets my needs	76	75	81	77	82	83	82	83	81
Precipitation Information	**79**	**77**	**80**	**78**	**82**	**83**	**81**	**81**	**79**
Clarity	81	80	82	81	84	86	84	83	81
Conciseness	82	79	81	79	82	86	82	83	80
Timeliness	80	75	81	79	82	83	81	82	78
Accuracy	78	75	77	76	78	77	76	78	77
Organization of information	77	77	79	78	83	86	82	81	79
Meets my needs	77	76	78	77	81	83	80	83	79
Customer Satisfaction Index	**75**	**74**	**76**	**75**	**79**	**76**	**77**	**77**	**74**
Overall satisfaction with the NWS Hydrologic Services Program	80	79	81	81	83	82	81	82	78
How well NWS Hydrologic Services Program meets your expectations	72	70	72	72	77	72	74	74	72
How NWS Hydrologic Services Program compares to an 'ideal' hydrologic services program	70	71	72	72	77	75	74	74	71
Contact NWS	**37**	**44**	**52**	**39**	**47**	**42**	**22**	**11**	**27**
Contacted the national Weather Service to report a problem or make a suggestion	37	44	52	39	47	42	22	11	27
Contact NWS Responsiveness	**72**	**81**	**79**	**73**	**86**	**83**	**72**	**65**	**75**
Responsiveness of the NWS personnel to your problem or suggestion	72	81	79	73	86	83	72	65	75
Likelihood to Take Action	**87**	**86**	**88**	**87**	**89**	**83**	**87**	**87**	**89**
Likelihood to take action based on the hydrologic information you receive from the NWS	87	86	88	87	89	83	87	87	89
Confidence in NWS	**86**	**83**	**86**	**85**	**87**	**82**	**84**	**86**	**85**
How confident are you that the NWS Hydrologic Services Program will do a good job of provi	86	83	86	85	87	82	84	86	85

Detail Report - by Primary Scope of Responsibility continued

NWS Demographics	National	Regional	Single state	All or parts of multiple counties	Single county	Large city/urban area	Smaller city/township	Personal	Other
What is your primary use of hydrologic information provided by the NWS or what commercial sector do you represent?									
Emergency management	27%	13%	38%	30%	82%	65%	71%	2%	22%
Traditional media	6%	18%	3%	25%	2%	5%	3%	2%	2%
Internet/Web	6%	6%	3%	4%	1%	2%	2%	4%	2%
Water supply/hydropower	0%	7%	9%	5%	0%	9%	0%	0%	2%
Agriculture	4%	2%	2%	2%	1%	0%	0%	2%	0%
Shipping	2%	4%	0%	0%	0%	0%	0%	0%	2%
Natural resource management	2%	6%	15%	4%	1%	0%	1%	0%	2%
Consulting/add value/provide custom hydrologic services	12%	3%	2%	1%	0%	2%	1%	0%	0%
Education	8%	4%	6%	1%	1%	2%	4%	2%	8%
Recreation	0%	7%	3%	3%	1%	4%	1%	10%	5%
Personal use	21%	11%	6%	12%	4%	7%	9%	76%	13%
Other	13%	19%	13%	13%	6%	4%	7%	2%	42%
What is the primary scope of your responsibility?									
National	100%	0%	0%	0%	0%	0%	0%	0%	0%
Regional	0%	100%	0%	0%	0%	0%	0%	0%	0%
Single state	0%	0%	100%	0%	0%	0%	0%	0%	0%
All or parts of multiple counties	0%	0%	0%	100%	0%	0%	0%	0%	0%
Single county	0%	0%	0%	0%	100%	0%	0%	0%	0%
Large city/urban area	0%	0%	0%	0%	0%	100%	0%	0%	0%
Smaller city/township	0%	0%	0%	0%	0%	0%	100%	0%	0%
Personal	0%	0%	0%	0%	0%	0%	0%	100%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	100%
Which of the following types of hydrologic information do you obtain from the NWS?									
Flood information	92%	90%	88%	94%	95%	95%	96%	83%	80%
Water supply/reservoir information	33%	32%	44%	33%	24%	24%	20%	16%	26%
Drought information	42%	58%	56%	54%	52%	47%	44%	32%	33%
Routine river forecasts/information	42%	72%	66%	60%	63%	58%	50%	40%	56%
Recreation information	17%	26%	21%	29%	13%	18%	19%	41%	29%
Precipitation information	90%	89%	91%	90%	91%	91%	88%	83%	84%
Other information	23%	12%	17%	8%	12%	13%	4%	14%	31%
By what means do you receive text-based NWS hydrology products (e.g.) flood warnings?									
NWS Web pages	92%	93%	94%	94%	87%	89%	92%	94%	91%
Non-NWS Web pages	31%	30%	26%	26%	21%	31%	26%	20%	28%
Phone	13%	21%	19%	18%	37%	27%	15%	2%	12%
NOAA Weather Radio	46%	43%	44%	60%	70%	55%	67%	49%	54%
NOAA Weather Wire	12%	14%	10%	11%	10%	11%	9%	1%	3%
Family of Services (FOS)	4%	7%	6%	5%	2%	2%	1%	0%	0%
Emergency Managers Weather Information Network (EMWIN)	27%	13%	19%	23%	39%	36%	30%	5%	16%
Local or cable TV	62%	47%	57%	52%	64%	56%	59%	62%	55%
Commercial Radio	37%	26%	37%	36%	38%	33%	33%	37%	39%
Private Vendor	6%	16%	9%	16%	18%	13%	12%	2%	9%
Other	12%	10%	17%	13%	17%	27%	13%	4%	13%
Are you familiar with the way these terms (minor, moderate, major flooding) are used by the NWS in their flood warnings?									
Yes	96%	90%	94%	92%	95%	89%	92%	87%	89%
No	4%	10%	6%	8%	5%	11%	8%	13%	11%
Do you now use or do you plan to use automated processing of hydrologic information?									
Yes	56%	66%	62%	56%	57%	64%	51%	32%	43%
No	44%	34%	38%	44%	43%	36%	49%	68%	57%
Currently use the combined NWS rain gauge and radar data within the national precipitation analysis?									
Yes	62%	65%	61%	53%	66%	54%	60%	54%	57%
No	38%	35%	39%	47%	34%	46%	40%	46%	43%
In what format(s) would you like to receive quantitative precipitation information?									
Graphical	90%	93%	92%	95%	92%	96%	95%	93%	89%
A gridded array	23%	32%	21%	20%	17%	20%	20%	15%	18%
In a GIS-compatible format	48%	35%	50%	33%	51%	55%	40%	13%	32%
XML	27%	21%	12%	16%	16%	27%	15%	14%	14%
Other	8%	4%	5%	3%	2%	5%	3%	3%	10%
Uses national analysis of the amount of water in the snow pack?									
Yes	36%	46%	33%	27%	35%	22%	33%	28%	27%
No	64%	54%	67%	73%	65%	78%	67%	72%	73%
In what format(s) would you like to receive snow water equivalent information?									
Graphical	87%	85%	83%	88%	86%	76%	90%	86%	76%
A gridded array	25%	23%	14%	17%	15%	20%	16%	12%	13%
In a GIS-compatible format	50%	29%	38%	27%	44%	44%	29%	11%	23%
XML	27%	17%	8%	14%	13%	16%	14%	12%	14%
Other	8%	3%	5%	3%	4%	5%	3%	4%	9%

Score Summaries - by Primary Scope of Responsibility continued

NWS Scores for Graphics	National	Regional	Single state	All or parts of multiple counties	Single county	Large city/urban area	Smaller city/township	Personal	Other
Please rate the following formats of receiving flash flood/flood warnings and watches from the NWS.									
Text	74	75	76	78	80	78	79	76	72
Graphics	77	74	79	77	80	80	79	79	78
A combination of text and graphics	80	82	85	84	86	90	87	86	84
NOAA Weather Radio	75	71	77	77	81	77	82	79	77
Please rate the following formats of receiving river forecasts from the NWS.									
Text	75	76	77	78	78	78	78	75	73
Graphics	75	75	80	76	77	77	78	77	76
A combination of text and graphics	79	82	84	83	83	86	84	84	83
NOAA Weather Radio	75	68	73	72	78	74	79	76	75
Please rate the following formats of receiving river/stream observations from the NWS.									
Text	75	75	72	77	78	76	78	74	73
Graphics	75	74	78	76	77	75	78	78	74
A combination of text and graphics	77	80	82	81	82	83	84	84	80
NOAA Weather Radio	74	65	70	70	76	73	76	75	71
Please rate the usefulness of these flood severity categories (minor, moderate, major flooding) in interpreting the impact of river flooding.									
The usefulness of these flood severity categories in interpreting the impact of river flooding	82	80	84	84	85	81	84	84	80
Graphical Flood Severity Map									
Visual appeal	78	77	80	77	82	80	82	77	79
Ease of understanding	82	78	82	80	84	79	83	80	82
Tells me what I need to know about flood severity	84	81	82	82	84	77	85	83	82
Additional Access Modes									
Using a graphical Web-based interface (e.g., menu) to select information for download	73	84	87	86	85	86	83	86	85
Query a data base	79	79	81	77	81	79	78	82	79
Wholesale downloading of information	74	66	72	67	73	65	64	65	59
Data Formats									
XML	71	79	75	72	74	70	75	77	67
In a GIS compatible format	79	81	86	79	87	83	80	75	76
River Conditions Map(5 categories)									
Visual appeal	80	81	79	76	80	79	80	78	77
Ease of understanding	83	83	82	78	81	78	82	81	79
Tells me what I need to know about river conditions	82	81	79	79	79	75	81	80	75
River Conditions Map(3 categories)									
Visual appeal	78	81	78	78	81	79	79	78	79
Ease of understanding	80	83	82	81	82	82	81	81	80
Tells me what I need to know about river conditions	75	78	77	78	79	79	78	78	76
Area of Interest Map									
Visual appeal	86	85	83	85	86	84	86	86	85
Ease of understanding	87	87	83	85	86	84	87	86	85
Tells me what I need to know about river conditions	87	85	82	85	85	83	88	86	84
Hydrograph without Average Level									
Visual appeal	75	79	81	76	80	77	76	75	77
Ease of understanding	78	81	81	76	78	78	76	76	80
Tells me what I need to know about river conditions	80	82	82	79	79	77	77	78	80
Hydrograph with Average Level									
Visual appeal	74	79	79	74	79	75	75	74	78
Ease of understanding	79	80	79	75	78	77	75	76	81
Tells me what I need to know about river conditions	80	80	78	78	78	77	76	77	80
National Precipitation Analysis Map									
Visual appeal	84	82	83	84	85	82	83	85	84
Ease of understanding	85	82	80	84	83	79	82	83	83
Tells me what I need to know about national precipitation	85	81	78	83	83	77	82	84	83
Water in the Snow Pack Map									
Visual appeal	84	79	81	80	82	78	79	80	76
Ease of understanding	80	78	78	77	79	75	77	78	74
Tells me what I need to know about snow pack water amounts	79	77	76	76	79	75	76	79	75
Uncertainty and Probability									
How useful would it be to have forecasts include uncertainty information	86	85	83	84	85	87	84	84	83
How useful would it be to have forecasts include probability information	83	76	75	72	80	74	77	76	71
Usefulness of providing information regarding uncertainty of river forecasts for short-term flo	84	80	81	81	83	82	82	83	80
Usefulness of providing information regarding uncertainty of river forecasts for long-term wat	80	77	77	75	77	74	76	75	76
River Stages during a 90 day Forecast Period Graph									
Visual appeal	68	68	71	67	72	65	70	68	66
Ease of understanding	67	63	66	64	69	58	65	64	62
Tells me what I need to know about river stages	72	68	68	67	71	63	68	69	67

Detail Report - by Primary Scope of Responsibility continued

NWS Scores for Graphics	National	Regional	Single state	All or parts of multiple counties	Single county	Large city/urban area	Smaller city/township	Personal	Other
River Stage during any Given Week over the next 90 days Graph									
Visual appeal	75	69	73	69	75	69	71	70	72
Ease of understanding	71	65	68	64	72	65	70	70	68
Tells me what I need to know about a given river stage	74	69	69	66	73	67	71	72	70
River Stage on a Daily Basis Graph									
Visual appeal	67	69	73	69	72	64	70	68	71
Ease of understanding	67	68	71	68	69	62	67	68	69
Tells me what I need to know about a river stage	70	70	73	71	72	62	70	71	71
100 Year Water Level									
How useful would it be to include the 100-year water level to characterize flooding in NWS pri	75	75	78	73	75	73	76	69	73

Score Summaries - Emergency Managers vs. Personal Use vs. All Others

	Emergency management	Total Impact	Personal use	Total Impact	All Others	Total Impact
Sample Size	632		934		754	
Flood Information	81	2.9	81	1.2	80	1.1
Clarity	82		81		81	
Conciseness	81		81		81	
Timeliness	80		82		80	
Accuracy	80		81		79	
Organization of information	81		79		79	
Meets my needs	81		83		81	
Water Supply/Reservoir Information	82	1.3	80	1.0	78	0.8
Clarity	82		80		79	
Conciseness	81		80		79	
Timeliness	81		80		76	
Accuracy	84		83		79	
Organization of information	82		79		77	
Meets my needs	82		81		78	
Drought Information	82	0.0	81	0.0	78	0.0
Clarity	82		81		79	
Conciseness	82		82		79	
Timeliness	82		81		78	
Accuracy	82		81		78	
Organization of information	82		80		78	
Meets my needs	83		82		78	
Routine River Forecasts/Information	81	0.0	81	0.5	80	1.2
Clarity	82		82		82	
Conciseness	81		81		82	
Timeliness	80		81		79	
Accuracy	80		80		78	
Organization of information	81		80		80	
Meets my needs	80		82		80	
Recreation Information	80	0.9	82	0.0	79	0.8
Clarity	80		82		80	
Conciseness	79		82		80	
Timeliness	82		82		79	
Accuracy	78		81		79	
Organization of information	81		81		78	
Meets my needs	81		83		78	
Precipitation Information	81	0.0	82	1.9	79	1.0
Clarity	83		83		81	
Conciseness	81		83		81	
Timeliness	82		82		78	
Accuracy	77		78		76	
Organization of information	82		81		79	
Meets my needs	80		83		78	
Customer Satisfaction Index	78	--	78	--	74	--
Overall satisfaction with the NWS Hydrologic Services Program	83		82		79	
How well NWS Hydrologic Services Program meets your expectations	75		75		71	
How NWS Hydrologic Services Program compares to an 'ideal' hydrologic services program you just imagin	75		75		71	

Contact NWS	45	-1.0	11	-0.8	31	-2.0
Contacted the national Weather Service to report a problem or make a suggestion	45		11		31	
Contact NWS Responsiveness	83	--	67	--	76	--
Responsiveness of the NWS personnel to your problem or suggestion	83		67		76	
Likelihood to Take Action	88	2.1	87	2.4	86	2.5
Likelihood to take action based on the hydrologic information you receive from the NWS	88		87		86	
Confidence in NWS	86	3.0	87	3.2	84	3.2
How confident are you that the NWS Hydrologic Services Program will do a good job of providing forecasts	86		87		84	

Score Summaries - Emergency Managers vs. Personal Use vs. All Others continued

NWS Demographics	Emergency management		Personal use		All Others	
What is your primary use of hydrologic information provided by the NWS or what commercial sector do you represent?						
Emergency management	100%		0%		0%	
Traditional media	0%		0%		16%	
Internet/Web	0%		0%		11%	
Water supply/hydropower	0%		0%		6%	
Agriculture	0%		0%		5%	
Shipping	0%		0%		2%	
Natural resource management	0%		0%		7%	
Consulting/add value/provide custom hydrologic services	0%		0%		3%	
Education	0%		0%		8%	
Recreation	0%		0%		20%	
Personal use	0%		100%		0%	
Other	0%		0%		24%	
What is the primary scope of your responsibility?						
National	2%		1%		4%	
Regional	4%		2%		19%	
Single state	9%		1%		11%	
All or parts of multiple counties	8%		2%		13%	
Single county	50%		2%		7%	
Large city/urban area	6%		0%		2%	
Smaller city/township	15%		1%		4%	
Personal	3%		89%		33%	
Other	3%		1%		8%	
Which of the following types of hydrologic information do you obtain from the NWS?						
Flood information	97%		85%		83%	
Water supply/reservoir information	27%		16%		28%	
Drought information	52%		31%		46%	
Routine river forecasts/information	66%		37%		56%	
Recreation information	13%		40%		32%	
Precipitation information	90%		84%		86%	
Other information	10%		15%		14%	
By what means do you receive text-based NWS hydrology products (e.g.) flood warnings?						
NWS Web pages	90%		94%		92%	
Non-NWS Web pages	25%		21%		24%	
Phone	33%		2%		12%	
NOAA Weather Radio	67%		50%		47%	
NOAA Weather Wire	9%		1%		8%	
Family of Services (FOS)	1%		0%		4%	
Emergency Managers Weather Information Network (EMWIN)	40%		6%		10%	
Local or cable TV	63%		65%		50%	
Commercial Radio	39%		38%		30%	
Private Vendor	16%		3%		9%	
Other	16%		4%		11%	
Are you familiar with the way these terms (minor, moderate, major flooding) are used by the NWS in their flood warnings?						
Yes	95%		87%		90%	
No	5%		13%		10%	
Do you now use or do you plan to use automated processing of hydrologic information?						
Yes	55%		34%		52%	
No	45%		66%		48%	
Currently use the combined NWS rain gauge and radar data within the national precipitation analysis?						
Yes	64%		55%		56%	
No	36%		45%		44%	
In what format(s) would you like to receive quantitative precipitation information?						
Graphical	93%		93%		92%	
A gridded array	17%		15%		23%	
In a GIS-compatible format	51%		13%		31%	
XML	15%		14%		18%	
Other	2%		3%		6%	
Uses national analysis of the amount of water in the snow pack?						
Yes	32%		29%		32%	
No	68%		71%		68%	
In what format(s) would you like to receive snow water equivalent information?						
Graphical	86%		87%		83%	
A gridded array	13%		13%		17%	
In a GIS-compatible format	43%		11%		24%	
XML	12%		13%		14%	
Other	3%		4%		5%	

Score Summaries - Emergency Managers vs. Personal Use vs. All Others

NWS Scores for Graphics	Emergency management		Personal use		All Others	
Please rate the following formats of receiving flash flood/flood warnings and watches from the NWS.						
Text	79		77		74	
Graphics	79		80		76	
A combination of text and graphics	86		87		84	
NOAA Weather Radio	80		80		76	
Please rate the following formats of receiving river forecasts from the NWS.						
Text	77		76		75	
Graphics	77		78		75	
A combination of text and graphics	84		85		82	
NOAA Weather Radio	77		77		72	
Please rate the following formats of receiving river/stream observations from the NWS.						
Text	76		75		74	
Graphics	77		78		75	
A combination of text and graphics	83		84		81	
NOAA Weather Radio	74		76		70	
Please rate the usefulness of these flood severity categories (minor, moderate, major flooding) in interpreting the impact of river flooding.						
The usefulness of these flood severity categories in interpreting the impact of river flooding	84		84		82	
Graphical Flood Severity Map						
Visual appeal	82		77		77	
Ease of understanding	83		81		80	
Tells me what I need to know about flood severity	83		84		81	
Additional Access Modes						
Using a graphical Web-based interface (e.g., menu) to select information for download	86		85		84	
Query a data base	80		82		79	
Wholesale downloading of information	71		65		66	
Data Formats						
XML	73		77		75	
In a GIS compatible format	86		75		79	
River Conditions Map(5 categories)						
Visual appeal	79		79		78	
Ease of understanding	80		81		80	
Tells me what I need to know about river conditions	79		81		79	
River Conditions Map(3 categories)						
Visual appeal	80		79		78	
Ease of understanding	81		82		80	
Tells me what I need to know about river conditions	79		79		76	
Area of Interest Map						
Visual appeal	86		86		84	
Ease of understanding	86		87		85	
Tells me what I need to know about river conditions	85		87		84	
Hydrograph without Average Level						
Visual appeal	79		75		78	
Ease of understanding	78		75		79	
Tells me what I need to know about river conditions	79		77		80	
Hydrograph with Average Level						
Visual appeal	77		74		77	
Ease of understanding	77		75		78	
Tells me what I need to know about river conditions	78		77		79	
National Precipitation Analysis Map						
Visual appeal	83		85		84	
Ease of understanding	82		84		83	
Tells me what I need to know about national precipitation	81		84		82	
Water in the Snow Pack Map						
Visual appeal	80		80		79	
Ease of understanding	77		79		78	
Tells me what I need to know about snow pack water amounts	77		79		77	
Uncertainty and Probability						
How useful would it be to have forecasts include uncertainty information	85		84		84	
How useful would it be to have forecasts include probability information	78		77		75	
Usefulness of providing information regarding uncertainty of river forecasts for short-term flooding	82		83		81	
Usefulness of providing information regarding uncertainty of river forecasts for long-term water supply	77		75		75	
River Stages during a 90 day Forecast Period Graph						
Visual appeal	71		68		68	
Ease of understanding	67		65		63	
Tells me what I need to know about river stages	69		69		67	

Score Summaries - Emergency Managers vs. Personal Use vs. All Others continued

NWS Scores for Graphics	Emergency management		Personal use		All Others	
River Stage during any Given Week over the next 90 days Graph						
Visual appeal	73		72		70	
Ease of understanding	70		70		67	
Tells me what I need to know about a given river stage	71		72		69	
River Stage on a Daily Basis Graph						
Visual appeal	71		68		69	
Ease of understanding	69		68		69	
Tells me what I need to know about a river stage	71		71		71	
100 Year Water Level						
How useful would it be to include the 100-year water level to characterize flooding in NWS products	74		69		74	

Score Summaries - by Emergency Managers by Primary Scope of Responsibility

	Emergency Manager National	Emergency Manager Regional	Emergency Manager Single State	Emergency Manager Multiple Counties	Emergency Manager Single County	Emergency Manager Large City	Emergency Manager Smaller city	Emergency Manager Personal	Emergency Manager Other
Sample Size	**14**	**25**	**54**	**51**	**316**	**36**	**97**	**17**	**20**
Flood Information	**76**	**81**	**77**	**85**	**82**	**80**	**79**	**74**	**81**
Clarity	75	82	76	86	83	83	81	73	81
Conciseness	77	83	75	85	81	84	78	77	81
Timeliness	69	81	80	83	80	82	79	68	82
Accuracy	86	77	78	84	80	76	78	75	82
Organization of information	74	80	74	85	83	81	80	78	77
Meets my needs	74	82	77	85	82	77	79	71	81
Water Supply/Reservoir Information	**83**	**82**	**84**	**83**	**83**	**86**	**74**	**91**	**76**
Clarity	87	81	81	80	83	84	78	89	73
Conciseness	84	84	81	82	82	86	72	89	75
Timeliness	80	83	85	85	82	86	71	89	76
Accuracy	91	80	87	85	84	87	74	89	78
Organization of information	73	83	84	83	82	86	77	89	75
Meets my needs	82	81	84	83	82	86	76	100	79
Drought Information	**83**	**79**	**81**	**83**	**82**	**82**	**83**	**83**	**82**
Clarity	84	80	82	83	81	84	83	89	83
Conciseness	82	79	78	82	82	84	83	89	81
Timeliness	78	79	80	80	82	84	82	89	84
Accuracy	91	78	80	84	82	87	83	78	83
Organization of information	78	76	81	85	82	87	82	78	79
Meets my needs	81	84	81	81	83	83	83	78	86
Routine River Forecasts/Information	**76**	**75**	**79**	**86**	**82**	**82**	**77**	**61**	**81**
Clarity	81	76	78	86	83	84	79	64	81
Conciseness	70	80	79	86	82	84	76	67	82
Timeliness	71	71	78	86	81	83	76	54	86
Accuracy	86	70	81	86	80	78	76	61	86
Organization of information	71	73	78	85	84	82	79	65	75
Meets my needs	79	77	79	84	82	81	78	54	82
Recreation Information	**0**	**83**	**78**	**83**	**79**	**77**	**80**	**78**	**89**
Clarity	0	83	79	83	79	80	80	78	86
Conciseness	0	83	75	87	78	80	80	78	83
Timeliness	0	83	83	81	81	76	84	89	86
Accuracy	0	83	78	83	77	74	78	72	89
Organization of information	0	83	76	84	79	78	83	72	94
Meets my needs	0	83	79	83	80	76	78	89	97
Precipitation Information	**73**	**76**	**78**	**83**	**82**	**83**	**81**	**78**	**80**
Clarity	72	78	78	85	84	86	83	74	81
Conciseness	74	79	77	84	82	87	80	76	83
Timeliness	73	78	80	84	82	84	81	81	82
Accuracy	77	73	75	80	78	80	76	77	76
Organization of information	69	72	78	83	83	85	82	82	77
Meets my needs	72	76	78	82	81	82	80	81	80
Customer Satisfaction Index	**72**	**80**	**75**	**80**	**79**	**76**	**77**	**73**	**81**
Overall satisfaction with the NWS Hydrologic Services Program	78	86	81	84	83	82	81	77	86
How well NWS Hydrologic Services Program meets your expectations	70	75	71	79	76	73	74	68	76
How NWS Hydrologic Services Program compares to an 'ideal' hydrologic services program	68	78	72	76	76	76	74	70	78
Contact NWS	**43**	**36**	**61**	**43**	**52**	**50**	**24**	**18**	**35**
Contacted the national Weather Service to report a problem or make a suggestion	43	36	61	43	52	50	24	18	35
Contact NWS Responsiveness	**69**	**73**	**77**	**83**	**87**	**81**	**73**	**56**	**76**
Responsiveness of the NWS personnel to your problem or suggestion	69	73	77	83	87	81	73	56	76
Likelihood to Take Action	**91**	**88**	**90**	**92**	**89**	**87**	**86**	**80**	**89**
Likelihood to take action based on the hydrologic information you receive from the NWS	91	88	90	92	89	87	86	80	89
Confidence in NWS	**87**	**85**	**85**	**87**	**87**	**84**	**84**	**81**	**86**
How confident are you that the NWS Hydrologic Services Program will do a good job of provi	87	85	85	87	87	84	84	81	86

Score Summaries - by Emergency Managers by Primary Scope of Responsibility continued

NWS Demographics	Emergency Manager National	Emergency Manager Regional	Emergency Manager Single State	Emergency Manager Multiple Counties	Emergency Manager Single County	Emergency Manager Large City	Emergency Manager Smaller city	Emergency Manager Personal	Emergency Manager Other
What is your primary use of hydrologic information provided by the NWS or what commercial sector do you represent?									
Emergency management	100%	100%	100%	100%	100%	100%	100%	100%	100%
Traditional media	0%	0%	0%	0%	0%	0%	0%	0%	0%
Internet/Web	0%	0%	0%	0%	0%	0%	0%	0%	0%
Water supply/hydropower	0%	0%	0%	0%	0%	0%	0%	0%	0%
Agriculture	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shipping	0%	0%	0%	0%	0%	0%	0%	0%	0%
Natural resource management	0%	0%	0%	0%	0%	0%	0%	0%	0%
Consulting/add value/provide custom hydrologic services	0%	0%	0%	0%	0%	0%	0%	0%	0%
Education	0%	0%	0%	0%	0%	0%	0%	0%	0%
Recreation	0%	0%	0%	0%	0%	0%	0%	0%	0%
Personal use	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%
What is the primary scope of your responsibility?									
National	100%	0%	0%	0%	0%	0%	0%	0%	0%
Regional	0%	100%	0%	0%	0%	0%	0%	0%	0%
Single state	0%	0%	100%	0%	0%	0%	0%	0%	0%
All or parts of multiple counties	0%	0%	0%	100%	0%	0%	0%	0%	0%
Single county	0%	0%	0%	0%	100%	0%	0%	0%	0%
Large city/urban area	0%	0%	0%	0%	0%	100%	0%	0%	0%
Smaller city/township	0%	0%	0%	0%	0%	0%	100%	0%	0%
Personal	0%	0%	0%	0%	0%	0%	0%	100%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	100%
Which of the following types of hydrologic information do you obtain from the NWS?									
Flood information	93%	96%	100%	100%	98%	97%	97%	76%	90%
Water supply/reservoir information	36%	28%	50%	31%	26%	22%	20%	6%	35%
Drought information	36%	44%	56%	57%	57%	53%	48%	6%	35%
Routine river forecasts/information	50%	76%	78%	76%	68%	58%	53%	47%	65%
Recreation information	0%	8%	17%	18%	12%	17%	12%	12%	20%
Precipitation information	71%	80%	98%	94%	91%	94%	87%	65%	85%
Other information	21%	16%	13%	4%	11%	14%	3%	18%	20%
By what means do you receive text-based NWS hydrology products (e.g.) flood warnings?									
NWS Web pages	86%	88%	96%	94%	86%	92%	94%	100%	85%
Non-NWS Web pages	21%	44%	35%	18%	23%	42%	25%	12%	25%
Phone	14%	32%	31%	35%	42%	31%	16%	6%	25%
NOAA Weather Radio	36%	44%	48%	76%	73%	61%	70%	47%	65%
NOAA Weather Wire	0%	8%	19%	2%	11%	8%	9%	0%	5%
Family of Services (FOS)	0%	4%	7%	0%	1%	0%	0%	0%	0%
Emergency Managers Weather Information Network (EMWIN)	57%	20%	37%	35%	45%	50%	36%	0%	35%
Local or cable TV	50%	56%	59%	65%	65%	64%	61%	53%	65%
Commercial Radio	29%	36%	39%	45%	41%	36%	33%	29%	40%
Private Vendor	7%	16%	13%	14%	20%	14%	13%	0%	15%
Other	21%	0%	19%	18%	17%	36%	12%	0%	15%
Are you familiar with the way these terms (minor, moderate, major flooding) are used by the NWS in their flood warnings?									
Yes	100%	83%	92%	90%	97%	92%	96%	94%	100%
No	0%	17%	8%	10%	3%	8%	4%	6%	0%
Do you now use or do you plan to use automated processing of hydrologic information?									
Yes	57%	56%	59%	51%	59%	67%	48%	18%	40%
No	43%	44%	41%	49%	41%	33%	52%	82%	60%
Currently use the combined NWS rain gauge and radar data within the national precipitation analysis?									
Yes	54%	60%	57%	57%	70%	54%	60%	65%	55%
No	46%	40%	43%	43%	30%	46%	40%	35%	45%
In what format(s) would you like to receive quantitative precipitation information?									
Graphical	86%	88%	94%	98%	91%	97%	93%	100%	95%
A gridded array	7%	32%	15%	24%	17%	19%	15%	6%	10%
In a GIS-compatible format	57%	28%	54%	45%	56%	75%	44%	6%	30%
XML	14%	12%	11%	16%	15%	33%	9%	18%	10%
Other	7%	4%	4%	2%	1%	6%	3%	0%	0%
Uses national analysis of the amount of water in the snow pack?									
Yes	23%	43%	36%	23%	34%	26%	30%	35%	25%
No	77%	57%	64%	77%	66%	74%	70%	65%	75%
In what format(s) would you like to receive snow water equivalent information?									
Graphical	86%	84%	87%	88%	87%	75%	88%	88%	85%
A gridded array	7%	24%	7%	16%	15%	14%	12%	0%	5%
In a GIS-compatible format	64%	32%	43%	37%	48%	61%	33%	0%	25%
XML	14%	12%	9%	8%	14%	17%	9%	12%	10%
Other	7%	0%	4%	4%	3%	6%	4%	6%	0%

Score Summaries - by Emergency Managers by Primary Scope of Responsibility

NWS Scores for Graphics	Emergency Manager National	Emergency Manager Regional	Emergency Manager Single State	Emergency Manager Multiple Counties	Emergency Manager Single County	Emergency Manager Large City	Emergency Manager Smaller city	Emergency Manager Personal	Emergency Manager Other
Please rate the following formats of receiving flash flood/flood warnings and watches from the NWS.									
Text	63	76	73	78	81	79	80	80	74
Graphics	68	71	79	79	79	81	78	80	77
A combination of text and graphics	70	83	84	87	86	90	87	85	86
NOAA Weather Radio	76	73	72	82	81	80	82	84	79
Please rate the following formats of receiving river forecasts from the NWS.									
Text	74	76	76	77	78	79	77	69	73
Graphics	74	74	80	78	77	79	77	71	80
A combination of text and graphics	75	85	83	85	83	87	85	76	87
NOAA Weather Radio	73	70	70	75	78	77	79	73	77
Please rate the following formats of receiving river/stream observations from the NWS.									
Text	72	74	72	74	78	80	78	67	74
Graphics	72	73	81	78	77	77	78	75	78
A combination of text and graphics	74	85	82	83	82	84	84	76	87
NOAA Weather Radio	70	68	65	71	77	73	76	78	75
Please rate the usefulness of these flood severity categories (minor, moderate, major flooding) in interpreting the impact of river flooding.									
The usefulness of these flood severity categories in interpreting the impact of river flooding	78	76	82	80	86	79	85	83	84
Graphical Flood Severity Map									
Visual appeal	70	84	78	84	83	81	82	79	81
Ease of understanding	81	85	78	88	83	78	82	79	85
Tells me what I need to know about flood severity	80	80	79	88	84	77	85	84	87
Additional Access Modes									
Using a graphical Web-based interface (e.g., menu) to select information for download	73	81	86	89	86	85	83	93	90
Query a data base	86	66	76	85	82	76	78	81	68
Wholesale downloading of information	79	73	71	73	73	69	64	78	51
Data Formats									
XML	63	79	71	77	73	66	74	83	63
In a GIS compatible format	79	88	86	86	87	91	82	78	81
River Conditions Map(5 categories)									
Visual appeal	83	79	75	80	80	77	80	78	77
Ease of understanding	87	80	77	83	80	75	82	81	82
Tells me what I need to know about river conditions	80	75	75	84	79	74	80	82	80
River Conditions Map(3 categories)									
Visual appeal	83	83	75	83	81	76	80	81	79
Ease of understanding	80	81	81	84	82	78	81	81	82
Tells me what I need to know about river conditions	77	75	75	82	79	75	79	81	82
Area of Interest Map									
Visual appeal	90	85	83	88	87	83	85	85	85
Ease of understanding	92	86	82	88	86	83	86	86	87
Tells me what I need to know about river conditions	91	84	80	87	85	83	87	86	86
Hydrograph without Average Level									
Visual appeal	74	82	78	82	79	77	75	79	79
Ease of understanding	83	85	77	81	78	77	73	78	83
Tells me what I need to know about river conditions	88	85	79	84	79	77	74	77	82
Hydrograph with Average Level									
Visual appeal	70	80	75	80	78	75	74	74	77
Ease of understanding	85	85	74	80	77	75	74	75	81
Tells me what I need to know about river conditions	79	85	74	84	78	75	74	77	78
National Precipitation Analysis Map									
Visual appeal	86	81	81	87	84	82	80	89	82
Ease of understanding	85	83	75	85	83	80	80	86	81
Tells me what I need to know about national precipitation	80	79	76	85	82	77	79	87	83
Water in the Snow Pack Map									
Visual appeal	86	78	78	85	81	77	78	84	75
Ease of understanding	77	78	74	81	78	73	75	83	71
Tells me what I need to know about snow pack water amounts	77	79	72	81	77	74	74	83	76
Uncertainty and Probability									
How useful would it be to have forecasts include uncertainty information	91	87	83	88	85	85	82	80	88
How useful would it be to have forecasts include probability information	83	79	71	78	81	73	75	76	75
Usefulness of providing information regarding uncertainty of river forecasts for short-term flo	85	82	79	81	83	80	81	87	84
Usefulness of providing information regarding uncertainty of river forecasts for long-term wat	83	78	74	81	77	73	75	83	80
River Stages during a 90 day Forecast Period Graph									
Visual appeal	75	69	64	71	73	66	70	77	59
Ease of understanding	80	62	58	70	69	57	65	73	58
Tells me what I need to know about river stages	79	68	60	71	71	63	67	76	62

Score Summaries - by Emergency Managers by Primary Scope of Responsibility continued

NWS Scores for Graphics	Emergency Manager National	Emergency Manager Regional	Emergency Manager Single State	Emergency Manager Multiple Counties	Emergency Manager Single County	Emergency Manager Large City	Emergency Manager Smaller city	Emergency Manager Personal	Emergency Manager Other
River Stage during any Given Week over the next 90 days Graph									
Visual appeal	74	69	70	70	75	70	70	78	72
Ease of understanding	72	66	63	68	72	64	67	75	70
Tells me what I need to know about a given river stage	73	72	63	72	73	65	69	75	68
River Stage on a Daily Basis Graph									
Visual appeal	64	69	68	72	72	65	69	69	71
Ease of understanding	68	70	65	72	70	61	66	67	69
Tells me what I need to know about a river stage	67	71	70	73	72	60	68	69	70
100 Year Water Level									
How useful would it be to include the 100-year water level to characterize flooding in NWS pr	69	81	72	75	75	74	73	72	80

Demographic Detail / Scores for Graphics

Demographics

	%
Sample Size	**2352**
What is your primary use of hydrologic information provided by the NWS or what commercial sector do you represent?	
Emergency management	27%
Traditional media	5%
Internet/Web	4%
Water supply/hydropower	2%
Agriculture	2%
Shipping	1%
Natural resource management	2%
Consulting/add value/provide custom hydrologic services	1%
Education	3%
Recreation	6%
Personal use	40%
Other	8%
What is the primary scope of your responsibility?	
National	2%
Regional	8%
Single state	6%
All or parts of multiple counties	7%
Single county	17%
Large city/urban area	2%
Smaller city/township	6%
Personal	47%
Other	4%
Which of the following types of hydrologic information do you obtain from the NWS?	
Flood information	87%
Water supply/reservoir information	23%
Drought information	41%
Routine river forecasts/information	51%
Recreation information	30%
Precipitation information	86%
Other information	13%
By what means do you receive text-based NWS hydrology products (e.g.) flood warnings?	
NWS Web pages	92%
Non-NWS Web pages	23%
Phone	14%
NOAA Weather Radio	53%
NOAA Weather Wire	6%
Family of Services (FOS)	2%
Emergency Managers Weather Information Network (EMWIN)	16%
Local or cable TV	59%
Commercial Radio	36%
Private Vendor	8%
Other	10%
Are you familiar with the way these terms(minor, moderate, major flooding) are used by the NWS in their flood warnings?	
Yes	90%
No	10%
Do you now use or do you plan to use automated processing of hydrologic information?	
Yes	46%
No	54%
Currently use the combined NWS rain gauge and radar data within the national precipitation analysis?	
Yes	58%
No	42%
In what format(s) would you like to receive quantitative precipitation information?	
Graphical	92%
A gridded array	18%
In a GIS-compatible format	29%
XML	15%
Other	4%
Uses national analysis of the amount of water in the snow pack?	
Yes	31%
No	69%
In what format(s) would you like to receive snow water equivalent information?	
Graphical	85%
A gridded array	14%
In a GIS-compatible format	24%
XML	13%
Other	4%

Graphics/Format

	Scores (0-100 Scale)
Please rate the following formats of receiving flash flood/flood warnings and watches from the NWS.	
Text	77
Graphics	78
A combination of text and graphics	86
NOAA Weather Radio	79
Please rate the following formats of receiving river forecasts from the NWS.	
Text	76
Graphics	77
A combination of text and graphics	84
NOAA Weather Radio	75
Please rate the following formats of receiving river/stream observations from the NWS.	
Text	75
Graphics	77
A combination of text and graphics	83
NOAA Weather Radio	74
The usefulness of these flood severity categories (minor, moderate, major flooding) in interpreting the impact of river flooding.	
The usefulness of these flood severity categories in interpreting the impact of river flooding.	83
Graphical Flood Severity Graphic	
Visual appeal *n=2252*	78
Ease of understanding *n=2255*	81
Tells me what I need to know about flood severity *n=2249*	83
Additional Access Modes	
Using a graphical Web-based interface (e.g., menu) to select information for download	85
Query a data base	80
Wholesale downloading of information	67
Data Formats	
XML	75
In a GIS compatible format	81
River Conditions Graphic (5 categories)	
Visual appeal *n=2288*	79
Ease of understanding *n=2283*	81
Tells me what I need to know about river condtions *n=2266*	80
River Conditions Graphic (3 categories)	
Visual appeal *n=2260*	79
Ease of understanding *n=2256*	81
Tells me what I need to know about river conditions *n=2244*	78
Area of Interest Graphic	
Visual appeal *n=2295*	86
Ease of understanding *n=2291*	86
Tells me what I need to know about river conditions *n=2292*	86
Hydrograph without Average Level Graphic	
Visual appeal *n=2274*	77
Ease of understanding *n=2271*	77
Tells me what I need to know about river conditions *n=2248*	79
Hydrograph with Average Level Graphic	
Visual appeal *n=2252*	76
Ease of understanding *n=2263*	77
Tells me what I need to know about river conditions *n=2242*	78
National Precipitation Analysis Graphic	
Visual appeal *n=2247*	84
Ease of understanding *n=2234*	83
Tells me what I need to know about national precipitation *n=2211*	83
Water in the Snow Pack Graphic	
Visual appeal *n=2030*	80
Ease of understanding *n=2019*	78
Tells me what I need to know about snow pack water amounts *n=1933*	78
Uncertainty and Probability	
How useful would it be to have forecasts include uncertainty information *n=2168*	84
How useful would it be to have forecasts include probability information *n=2186*	77
Usefulness of providing information regarding uncertainty of river forecasts for short-term flooding *n=2156*	82
Usefulness of providing information regarding uncertainty of river forecasts for long-term water supply *n=2077*	76
River Stages during a 90 day Forecast Period Graphic	
Visual appeal *n=2105*	69
Ease of understanding *n=2102*	65
Tells me what I need to know about river stages *n=2047*	69
River Stage during any Given Week over the next 90 days Graphic	
Visual appeal *n=2118*	71
Ease of understanding *n=2111*	69
Tells me what I need to know about a given river stage *n=2081*	71
River Stage on a Daily Basis Graph	
Visual appeal *n=2125*	69
Ease of understanding *n=2122*	68
Tells me what I need to know about a river stage *n=2081*	71
100 Year Water Level	
How useful would it be to include the 100-year water level to characterize flooding in NWS products *n=2129*	72

Verbatim Comments

Verbatim Comments

Responses to all "Other—specify" options are shown on the following pages, listed by question number. Comments have been edited for clarity and sorted alphabetically. Where a number appears in parentheses after a comment, that comment has made by multiple customers.

Q2. What is your primary use of hydrologic information provided by the NWS or what commercial sector do you represent? (other responses)

Academic

Adjacent property owner

AK Department of Fish and Game information to sport anglers

Amateur Radio Emergency Services (ARES)

American Red Cross (3)

Amusement industry

Aquatic research

Arboricultural and Batteau re-enactor on many rivers in VA, WVA, and NC

ARES SkyWarn

Aviation

Both natural resource management and emergency management and water supply.

Both natural resource management as a State Fisheries Biologist and personal use.

Both personal use & emergency management.

Business - construction

Business and health and welfare

Business planning

Business travel

Care for school grounds

Church

Civil engineering (3)

Climate monitoring

Coast Guard

Verbatim Comments continued

Construction (6)

Consultant

Consultant traveling to villages

County public works

County road department

Cruise sales

Dam safety use

Distribution of oxygen

Drainage - pump stations

Drought monitor

Emergency notification

Engineering & construction

Erosion and sediment control

Family safety

Federal agency

Federal agency involved with water resource planning.

Federal government, real-time reservoir control, water management.

Fishing (2)

Flood control (14)

Government

Government - Lock Construction at McAlpine Locks

Government (fed) hydromet. research

Government Agency

Ham radio emergency communications (2)

HAM Radio SkyWarn

Haz-mat/ fire rescue

Healthcare facility

Verbatim Comments continued

Highway maintenance

Historical information

Hospitality

Hurricane information (2)

Hydrogeologist researching the connection between climate and water levels in wells.

Hydrography - DEA, Inc

Hydrologic management - federal government

I am a WCIA 3, Champaign weather watcher.

Industrial

Industrial security

Insurance (3)

Investment

I've turned into the 'weather person' for our company!

Kayaking

Lake forecasts

Landscaping and lawn care

Law enforcement (3)

Manufacturing (3)

Marina (2)

Marina/restaurant/home on river

Medical field job

Military

Newspaper

NGO disaster response

NOAA weather radio & weather.gov

NWS

NWS co-op weather station

Verbatim Comments continued

NWS severe weather spotter

Other federal agency

Paratransit operations

Personal Emergency Management

Personal flooding information (2)

Planning (county level)

Police/government

Property owner

Property risk analysis/loss prevention

Property safety

Provide output to the public and warnings if necessary based on hydro data.

Railway transportation

Research

Research/oceanography

Reservoir operation

Reservoir regulation

River Authority (3)

SAR/emergency management

Scientific research

Search and rescue

Sell building supplies

Severe weather research

SkyWarn (7)

Specialized consulting from personal to emergency uses.

State Climatology Office

State DWR

State Government - Water Resources Division

Verbatim Comments continued

Storm spotter (2)

Storm water pollution studies

To check river height during flood conditions.

To know when or if we'll be flooded.

Toll road operations

Transportation (3)

Trapping

Travel planning (2)

U.S. Coast Guard (3)

University research

USCG (4)

Utility

VDOT

Volunteer fire department

Wastewater operator

Water Control Management

Water Resource Management (Federal flood control, water supply and environmental)

Water supply fire fighter

Water/wastewater plant protection

Weather co-op & SkyWarn spotter

Weather watcher (2)

Q3. What is the primary scope of your responsibility? (other responses)

Six municipalities & Penn State University.

Academic

Advanced storm spotter

Area wide through website

Author

Verbatim Comments continued

Basin

Boat sales on the river

Branch protection for First Citizens Bank.

Church

Client site

Client specific

Commodore

Community Hospital

Company of 50 employees

Corporate

Corporate - Industrial

Determine work schedule and river levels for use with the Batteaux.

Environmental monitoring

Fire district (400,000 people in 3 counties).

Ham radio

Healthcare facility (2)

High school

I explain the watches/warnings/forecasts to family and friends who don't understand what they mean.

I have no official title but the local borough looks to me for flood information.

Industry

INEEL

Inland rivers (2)

International

Large city encompassing two states.

Large national laboratory

Local Marina

Local property

Verbatim Comments continued

Local television, KTVX

Maine Turnpike I-95

Manufacturing plant

Manufacturing Site (800)

Marina 400+ slips

Marina/restaurant/home on river

Marine weather

Military affairs

Military base

National Forest/Lewis & Clark N. F.

National Park

NC Historic Site located within flood plain adjacent to river

Nushagak and Kvichak Rivers

Our fire district

Parts of two states

Personal - southeastern Ohio. Marietta to Steubenville for work.

Primary Maury, Giles, Lewis, Perry counties, TN but do national disaster work with American Red Cross.

Private Industry (Government Contractor)

Professionally, the lower half of the Tanana River Drainage. We don't have counties in Alaska, and if we did a large part of this area would not be in one. I also use the results personally.

Project

Puerto Rico and adjacent islands

Region in Alaska

Regional - 10 Counties

Research organization

Research projects

Research/Education-universal

Verbatim Comments continued

Reservoir

Residents living adjacent to the Coleto Creek below Coleto Creek Reservoir.

River levels

SE Arizona

School (3)

Single county & national

Small business

Specific area of operation / AOR

State Park (2)

Storm watcher / storm tracker.

Teacher (2)

The safety of my family.

Town

United States Capitol

University (2)

Upper Peninsula of MI

USCG

Warehouses, mini-storage facility

Work related

Work site

Yacht club

Q4. Which of the following types of hydrologic information do you obtain from the NWS? (other responses)

24hr rain/snow totals

All kinds of publications in general

All other watches and warnings

All severe weather and hurricane data

Verbatim Comments continued

All warnings/watches

All weather related

Any other hydrologic/atmospheric information

Anything the TV viewing public needs to know

Archival weather data, emergency weather background information

Archived information

Assorted meteorological data

Aviation (2)

Barometric pressure (2)

Buckhorn Lake information concerning gates of dam being closed during large-scale flood event of county

Buoy data Lake Michigan

Ceiling and visibility

CFS information

Check snow/rain forecast for multiple state road trip planning

Climate information (3)

Conference calls with HPC/NCEP and LMRFC, OHRFC, NCRFC during major flood events

Current stream gage information

Current water levels for canoeing

Daily weather (3)

Dam information (2)

Data buoy information

Disasters

Education

Effects on travel

Fire danger (4)

Flood and drought records

Flood frequency data

Verbatim Comments continued

Flooding, dam failure, debris flow research

Flow information

Forecast (13)

Gauging

Hail, tornados, snow fall

Ham radio Operator; NWS weather spotter

Hazardous weather (4)

High temperature, low RH, high wind

High wind warnings

Historical (4)

Hurricane (69)

Hydrological outlook

Ice jam projections

Just general US weather

Lake inflow forecasts, alternative reservoir operation scenarios.

Lake levels

Lakes forecast

Lightning and fire danger

Local 5-day forecast

Local forecasts and observations

Long range forecasts

Major storms

Marine forecast (2)

Marine information and any special weather statements/severe weather

Near shore - offshore weather

Other warnings

Ozone levels

Verbatim Comments continued

Past weather to plan best visit

Possible effect of weather on air travel

Precipitation compared to normal and previous year

Precipitation forecast and weather summary, forecast discussion

Projected flood level hydrographs 1 to 2 days into the future

QPF's (2)

Quantitative reports

Radar (14)

Rain over specific areas

Rainfall frequency atlas

RAWS graphs/data

Real-time river levels

Real-time river stage

Record flood information

Red flag warnings

Regular weather report

Rip tide

River gauges

River levels (5)

Road conditions (2)

Satellite and Doppler information (3)

Severe weather (25)

Snow pack (2)

Snow, fog, wind travel in several areas

Specific weather forecasts when needed

Spotter activation

Spotter training

Verbatim Comments continued

Storm information (10)

Stream flow conditions

Temperatures (2)

Thunderstorms (6)

Tidal (3)

Time that the dams release water

Tornado (6)

Travel (4)

Tropical storm information (8)

Tsunami warnings

Twice a day precipitation forecast (at 0600PT and 1200PT)

Watch the river gauges during upcoming flood events

Water level information

Waterway navigation charts

Wave height, sea temperature

Weather forecasts (7)

Wind (12)

Worked related to outside

Q18. By what means do you receive text-based NWS hydrology products (e.g. flood warnings)? (other responses)

800 Megahertz Radio Link (2)

ACCESS (2)

Accuweather.com

AK-prepared

Amateur radio (5)

AP wire

Area fishing tackle shops

Verbatim Comments continued

Associated Press (3)

ASTRA

AWIPS or old AFOS

Bill Mork Daily Reports

Blacksburg Alert System

CBI

CCIC/NCIC

CLEAN system (2)

CLETS

County E O C

Data exchange

Data from SERFC Connection Server

Direct connection to AFOS

Direct contact with NWS (4)

Direct product transfer

E Warn

EAS Equipment

EDIS (2)

E-mail (33)

Emergency email

Emergency Operations Center

Emergency radio system

Fax (2)

Fire dispatcher

FTP

Have Weather Bug, Weather Channel on Computer for alerts

I prefer your web pages to all other sources and like your NERW format very much including the availability of local pinpoint forecasts.

Verbatim Comments continued

IDD from UCAR

If it ends up on DHS's NWWARN I'll get that, too.

In-house meteorologist

Instant message with NWS. All offices should participate in this.

Internet (4)

Interwarn (3)

IWIN (4)

Law enforcement teletype

LDM (2)

LEDS

Legislative Notification

LEIN

Local EMA

Local radio station

Local reporting of weather conditions

Local TV web pages

Maine Emergency Mgt.

MEMA (2)

Metro emergency radio

Mike Akulow

Miscellaneous programs, pager

Monitored in University Police Dispatch

National Public Radio

National RAWS sites

National Weather Channel

Navigation charts

Navy websites

Verbatim Comments continued

NAWAS (5)

NAWAS

Neighbor's warnings

Newspaper (5)

NOAA via EDIS

NOAA (2)

NOAA-Port channel 4 AFOS

Non-NWS sensors and gauges

Non web based internet

NWS employee contact

NWS FTP Site

NWS/JAX (Jacksonville Florida)

ODEM paging system / OKfirst

OK FIRST (6)

On alert

Open house in Lincoln, Illinois

Other State agencies

Pager (16)

Part of university program

Passed down through local EMA offices via fire department radio system

Pastar

PBS

Personal contacts (2)

Public meetings

Public Radio (2)

Radio link

Region Server

Verbatim Comments continued

River keeper at Hwy 36 W

Riverboat kayak guide/USGS not NWS

RPIN email & pager

Salt River Project

SatCom

Satellite

SkyWarn Ham Radio Nets (3)

State ASTRA

State EOC

State network

State radio

Storm prediction center and Intellicast (radar summery - only)

Storm Sentry

Supply data to NWS

TX, Forest Service/DPS

USCG (5)

VA Crime Information Network (3)

VCIN (4)

VDOT/web site

VHF radio

WEAPONS network

Weather Channel

Weather spotters

Weatherbank to an AP feed

Weatherbug.com (5)

Weathernode

Wireless Text Message (SMS)

Verbatim Comments continued

Word of mouth

Work/school board emergency management

WVEAPONS

www.boatus.com/huricane

WxSvr

Q37. In what format(s) would you like to receive quantitative precipitation information? (other responses)

Also plain text, but a nice plain text and not all caps and larger to read - more appeal

An easier click and point or type in the desired information request i.e. 'the white river in Arkansas or Lonoke County, AR'

ASCII text

Comma delimited (3)

CSV

Data-base (Excel)

Delimited TXT format

E-mail (5)

Excel (2)

Faster download time

Graphics (maps) with clearly marked lines and numbers of contour intervals

Graphs of hourly precipitation at the RAWS sites.

GRIB? GIS? XML?

HTML compatible for a personal website

Increased detail

Java animations (2)

Local gauges, both automatic (6 total) and volunteer (about 45) to cover the entire county (~1,238 square miles). No radar coverage for 2/3 of the county (which happens to be where the major flood threat and majority of the population lives).

Local specific vs. national and state.

Verbatim Comments continued

MDB

More live updates than the conventional delayed

NOAA Weather Radio

Numerical zone

Over the phone

Palm or Handheld

PDF (3)

Plain text

Plain text with delimiters

Printable text and graphics emailed to WX stations

Radio

RSS

SHEF (2)

SHX

Spreadsheet (4)

Text (18)

Weather radio

WEB - mouse shows total

XLS and tab delimited

XLS spreadsheet

Q40. In what format(s) would you like to receive snow water equivalent information? (other responses)

ASCII text

Comma delimited (2)

CSV

Downloadable email (2)

E-alerts

Verbatim Comments continued

Excel (2)

Faster download times

Graphics from RAWS/SNOTEL

Graphics with clearly marked numbers & contour intervals

HTML compatible for personal websites

Java animations (2)

MDB

NOAA Weather Radio

Only know what a web page is

Over the phone

Palm or handheld

Paper

PDF (2)

Plain text with delimiters

Regional on weather radio

RSS

SHEF

Site list

Specify in inches and feet (3)

Spreadsheet ready

Tabular

Text (17)

Text format for each drainage area in 3-hour intervals

Text product a well as graphical

Text via FTP

Text via web

TOPO style

Verbatim Comments continued

Web - mouse shows totals

XLS and tab delimited

XLS spreadsheet

Verbatim Comments continued

Responses to all open-ended questions are shown on the following pages, listed by question number. Again, comments have been edited for clarity and sorted alphabetically. Note that comments have been coded for Q48.

Q24. If 5 or less to Q23, what could the NWS do to make these flood severity categories more useful?

A lot of flood damage is caused by rising water tables and ground pressure and most people don't live near rivers and lakes. A system of predicting or warning of this type of flood risk would be very useful.

A more specific color-coded system would provide more detailed information.

Accuracy by adding more gauges. When giving flood warning and river crest information consider the effects of upstream flooding on the lower regions.

All categories begin with the letter M - this may cause confusion between the distinguishing factors. Our society is accustomed to a tiered number scale as severity indexes for things like tornados and hurricanes, perhaps a tiered number severity scale would communicate the severity better to the general public.

Apply techniques similar to those used to emphasize hurricane-severities.

As a manager of a manufacturing facility located on a major waterway (Ohio River) it would be more beneficial to be able to input a milepost number for my location on the Ohio River and receive expected elevation above sea level projections for that milepost. With that information I could make decisions on protecting portions of my manufacturing facility that are at known elevations.

Automate Polebridge, MT river level. Next closest auto stations are approximately 20 miles north and same to the south. The main destruction of a flood would be less than 1 mile from the Polebridge site i.e. homes and commercial property. Thanks.

Based on recent flooding in Marietta OH, NWS web site, local radio and local newspapers gave very different numbers of the expected river crest times and levels. In fact, two days after the river crested the newspaper reported a crest level two feet higher than the web page, and the newspapers level for flood stage was one foot higher than the level used on the web. Problem seems not to be how useful is the presentation of data, but how is it communicated to news sources used by people to protect their homes and businesses.

Be more accurate in precipitation amount predictions.

Be more accurate with your predictions.

Be more specific about where flooding will affect people i.e. 1) how far from the river/creek bed will be affected for local residents 2) how will highways and other roads be impacted 3) warnings to avoid specific local low areas.

Be more up-to-date. Many of these reports are after the fact, when nothing helps!

Verbatim Comments continued

By possibly providing some sight specific information.

Color coding would be useful.

Consider describing them in rural versus urban terms. Street flooding, runoff flooding versus creek & river flooding.

Contact local areas and let them make up the categories. I know NWS does it for a larger area so that can't happen. River levels need to be updated better and faster. Web updates are hours behind. IFlows river gauge does not work half the time.

Convert them to numbers, the higher the number, the more dire the consequences.

Definition of flood categories in statements, watches, and warnings.

Direct users must be provided with the same criteria used by the WS in determining the severity level, then based on consistent application of the severity scale — past history of flooding severity might be translated into specific actionable warnings. For example — in lieu of 'moderate flooding possible for southern Sacramento County', the communication may be 'heavy localized rainfall in areas south of Sacramento including Elk Grove, Galt and areas east of hwy 99 may lead to flooding of drainage canals and low lying areas. People should avoid areas where water collects during storms and those with property or recreation near creeks or rivers should take steps to protect life and property in case of localized flooding. The heavy rain cells are expected to move from the southwest near the delta in to the foothills over the next 2-4 hours'. Key elements—specific areas, specific impacts, specific timing, and specific recommendations.

Do not use them!

Establish a rating system similar to hurricanes, homeland security, tornadoes, etc. A practical and possible classification system could be as follows: C1 - no danger, C2 - Flooding of land, no threat to structures. Flooding is limited to near bank areas. C3 - Still water flooding of basements and first floor of structures within flood plain. Flooding threatens most structures within the flood plain. C4 - Structural and property damage due to current velocity is likely. Dangerous currents. Flooding threatens entire flood plain. There are likely extremely dangerous areas within the flooded area. C5 - Flooding is beyond defined flood plain. There is a significant and widespread threat to life and property due to flooding. C6 - Noah's Flood

Excellent, the way they are.

Factor in weather things like hurricanes in river flow predictions, Ivan will be near western NC Sat/Sun with 6-12 inches of rain and you do not have the Cape Fear River predicted to rise in Fayetville for the next 10 days, come on?

Get rid of them. How or on what basis are they determined? I can tell how bad the flooding is by seeing what the impacts are on the local roads, buildings, structures, and how often they occur statistically. Minor, moderate or major flooding does not tell me anything. Rte 66 flooding at 32 feet tells me something. Graphics and a predicted area, predicted amount of rising water in streams, rivers, etc.

Have fewer categories.

Verbatim Comments continued

Have them in a poster.

Here in Upson County, GA our problem is that the official river gauge is located 15 miles south of Thomaston in an area where the Flint River is wider and the land along it is lower. The river gauge at this point does not give us adequate information for up-river. Evacuations / critical points where we have many homes from just south of Hwy 36 north to the Upson/Pike County lines. I take what information is available from the Culloden site prior to an incident, and then talk with landowners via phone up-river to make necessary decisions, hopefully before the flood event. Our two best/reliable sources we use are the boat rental company and the BSA located just south of Elkins Creek at the Upson/Pike County line. Without their assistance in providing us with accurate river readings, we would really not have any use of the hydro products available for the Flint River for the counties along the 'river gorge'.

Historic references. Maps/models of forecast flood inundation.

I do not know if there is a way to make the categories more useful, as I work in an area where the majority of flooding ends in one hour or less. Also, I have areas where a minor flood inundates structures. My only real suggestion would be that the categories should be customized to the river system in question.

I don't think it's always clear if flooding is minor, moderate or major. In some cases, a flood might be considered moderate at a point on the river but there are minimal effects to people at that point. In a case like this, even if a flood is moderate in terms of stage or flow, it should be considered minor because it has very few effects on people. Also, I don't think it's clear enough what makes a flood minor, moderate or major, especially in the moderate category. Everyone can picture a 'minor' flood, and a 'major' flood but it's hard to picture exactly what happens in a moderate flood.

I live on a hill. I really couldn't care less about flooding.

I would like to have NWS be more specific in there predictions in the flooding areas. Right now I have a problem with septic smell on the Withlacoochee River. I have reported it to flood management, they say it is from debris and etc. not sewage. I really would like to have it examined by environmental or water management because folks it is sewage and right now I can hardly stand to be outside. I see foaming stuff floating down the river toward Dunnellon every morning approx about 8:00 to 9:00 AM and it continues in small amounts throughout the day. Who else do I explain this and get something done? I'd appreciate any help in this manner.

In addition to associating flood severity to damage or potential damage, also associate it with expected flood frequency (i.e. minor=less than 5-yr event, moderate=5-25 yr event, major=greater than 25-yr event).

Increase monitor capabilities, tie this information into real-time network, and add specific vulnerabilities to specific locale.

Instead of mild, moderate, severe, simply state the conditions specifically; i.e., state the definitions or portions as they apply.

Issue more frequently; explain the problems associated with river stages at more frequent intervals. Use the TV more not everyone has a computer. Urge EMA personnel to inform residents better based on your

Verbatim Comments continued

findings. Make it mandatory that residents especially those in low lying areas be aware of the dangers; there are many new residents who are not 'flood savvy'.

It seems that the NWS utilizes commonly used ranges when making flood severity forecasts - similar to what is used by FEMA and the Red Cross. Only problem is that the range of damage within a single category is significant. Any fine-tuning of the data, perhaps with a number of possible inches (in general terms) along with the common ranges would be very helpful.

It would be helpful to know information about the river in my exact area. I know that isn't always possible ... but would be helpful.

Just provide the information without categorical interpretation. The stage forecast and information outlining what may be impacted is more important than the NWS estimation of the severity of the flooding.

Let me know what the actual height of the river. This may be good for Emergency Managers and media, but not very useful for a homeowner.

Make them easier for the general public to understand. I use them for work. I plan construction site preparation and crane use from your reports.

Make things findable.

Maps of rivers highlighting areas along rivers that are threatened.

Maybe a 5-level severity scale.

Minor flooding.... The vast majority of heavy thunderstorms will produce this and local media and emergency managers usually are able to handle this and getting the word out quickly. The remaining categories are pretty self explanatory.

More categories or sub-categories.

More categories.

More education for the general public.

More examples.

More precise measurements based on feet above sea level.

More precise.

More specific, use graphics.

Move the office back to West Virginia. Since the office was moved to Blacksburg, NWS has done very little to support efforts in West Virginia. Iflow system must be repaired and maintained. The computerized broadcast are very difficult to understand and not localized enough. To much information is given about other areas not in the area of coverage of the radio.

Verbatim Comments continued

Not very much as the terms are and will always be relative to the development along river ways. Streams in the west can rage 3-4 orders of magnitude and still not cause much damage as opposed to streams in the east coast.

Perhaps grade flooding in a scale from 1 through 5 much as tornadoes and hurricanes are classified. The amount of flooding, for example, if minor flooding is predicted is still 100% if it happens in an isolated area that affects someone or something. Also, someone's interpretations of minor-moderate-major flooding could be open to considerable subjectivity. This is indeed, a difficult item to quantify, but just my thoughts!

Plain as possible. English please.

Provide more impact potential information.... many more/other areas and items are affected by flooding than are noted and I believe this gives people a false sense of security when they don't realize that if (for example only) New Cumberland Lock and Dam exceeds x amount of feet, flooding will occur on route 7 in Ohio and several other lower areas in this location. The potential impact notes on these items are very sparse. Also, when rising waters occur, the web updates are not very timely. Thank you.

Put a numeric category on them like with a storm; tornado F0, F1 or cyclone Cat. 1, Cat. 2, etc. depending on the forecast of the height above flood stage... R0 - minor 1-2 ft. R1 - moderate 3-5 etc.

Rate on a scale of 1-10 instead of 3-point scale. Text has too many abbreviations for the layman to understand. i.e.: http://www.wrh.noaa.gov/cgi-bin/Sacramento/afd?SFOAFDSTO

Residents will only take protective actions when they feel the flooding event will affect them personally. The warning information sent out over Weather Radios and media will be more effective if specific areas are listed that are going to flood. This is very hard to accomplish and almost an impossible service for the NWS to provide. I would recommend continued use of the present severity categories, but give some type of objective measurements the residents can understand, such as feet above flood stages, water levels etc.

Scale them to the individual rivers, streams and creeks.

Since the development of areas around flood zones have grown in the last several years, impacts on surrounding communities should be expanded to cover their impacts and the impact of this development.

Something a little more tangible (i.e., most flood prone streets will be flooded, streets that occasionally flood will be flooded, areas that rarely flood will be flooded.)

Stop issuing warnings for so called 'minor flooding', when the impact is minimal and leads to lots of 'crying wolf'.

Supplement the color graphics with numerical zones for users that suffer from color blindness. Include the out spill areas of the major rivers to include the sound waters.

The flood severity category definitions currently used are good, but they often are inaccurate when applied to particular situations. Yesterday, minor flooding occurred on the Schuykill River. Now there are aren't many

Verbatim Comments continued

houses or other buildings in direct each of the Schuykill River (at least in Philadelphia), but some of the city's most major arteries will be shut down by minor flooding of the Schuykill. People needed to be pulled from their cars by the Fire Department. Perhaps, the flooding severity risk should be changed to: slight, moderate, and high risk to life and property and adjusted more specifically to local situations.

The gauge I view because of my property, states that street and roadway flooding is widespread at flood stage (14 ft.) The only thing under water is a road through a park adjacent to the river. No public roads are flooded at all. Some people are scared every time the river is forecast to rise to flood stage. They think the water will be in our street.

The problem with most of the warnings for certain counties is that they are too generic and not area specific. On certain river systems in Cocke County, Tennessee, there are not enough river level gauges and sensors up stream, as is the case on the Pigeon River. Folks up river do not get timely warnings when the gates are opened on the Walter's Dam in N. Carolina. More river sensors and measurements up river would make your categories more accurate for the areas that need the information.

The use of minor, moderate, and major could use some improvement. I work in law enforcement and unfortunately; the public tends to underrate warnings. Then when minor and moderate are used with warnings, it seems to further degrade the public's perception of the threat, if any.

The useful information is the specific level information (at my house!) so the severity category depends on each individual location and circumstance. What is minor to my neighbor might be major to me. So keep providing this information as you do and thank you.

These terms are too general for my use.

Three levels are probably not enough.

To be honest, I am not sure, partly because I don't regularly listen to or view them. It is hard to generalize, which these categories do, for large regions.

Use graphics, and use customer input to define categories.

Use language that is understandable, not multi-syllabic.

Verify with local jurisdictions prior to public statements and warnings. Warnings and statements are usually issued with no verification by local Emergency Management or jurisdiction input. This would help borderline events from being both over warned and underwarned.

Warnings should be issued when there is a need for someone to take action. Why are we issuing warnings when the situation is no more than a nuisance? Why are warnings issued for entire counties when the threat is extremely local (water over a stretch of country road, for example). When county flood warnings are issued, we are told they must be kept in effect as long as a single report of any flooding of any kind is still being reported. So an entire county remains under a flood warning for 6-8 hours because a small stretch of county road is under a few inches of water. This is a policy that completely desensitizes the public to warnings, especially in this day and age where warnings are not only delivered through the traditional media

Verbatim Comments continued

but also through email/pager/cell phones, etc. We need to back up and stop thinking like meteorologists and start with this question: does this situation require the public to do or not do anything?

We could use more stream specific gauging and forecasts. NWS does that in graphic format on the web for some locations. That is really excellent data in determining if our train operations are safe, or allocation our resources in response to flood events. The more streams that have data available, the better we can respond to maintain the Alaska Railroad's vital freight and passenger train service.

What could the NWS do to make these flood severity categories more useful?

When broadcasting a Flood Warning...for a certain river.... make it be known that it is for that river/city and not for the entire county, as some people get confused over a Flood Warning for a river compared to a flood warning for the entire county.

With Ivan - the forecasts and river levels were way off the mark. & NBSP; & NBSP. It was too little too late. I checked this website at 4 pm on Friday and the river forecasts were unrealistic with the amount of rain we were getting. The river forecasts I saw only on your website were based on a very conservative weather forecast that ended up being completely wrong. The Allegheny River (Parker) prediction was 15 ft. off! It would be helpful to have crest times also. NOAA and ACE are the most respected water shed authorities and I did not see any representation on the news when we really needed it. The local news staffs are not qualified to discuss river floods. I envision a NOAA or ACE spokesperson with river maps and crest charts outlining the effect of a flood in each area - complete with crest times.

You could consider the erosion potential and the momentum damage potential for carrying away structures, cars, and people. This would seem to be a more severe category than any you currently use. I used to live in New Mexico, where a flash flood could be a severe risk. And water which is fast flowing and in flood is far more dangerous than a slower flow, I think as something like the 5th power of the speed, I believe discovered by (then) Capt, US Army, Robert E Lee on the Mississippi.

You do very well...however, I believe that an occasional NWS informative message broadcast on the major TV news/weather broadcasts, such as, for example, the meanings of the Minor Flooding, Moderate Flooding, Major Flooding would be of great interest and usefulness to a large number of people.

Your question does not adequately address urban street flooding issues, which in our area are more likely to cause problems. Our local office does issue urban watches and warnings based upon remote instrumentation (Doppler, AWIPS...) but is lacking in 'ground truth' verification of the remote sensing apparatus.

Q29. Please list any additional access modes and formats not already mentioned that you would like the NWS to consider to make automated data processing more efficient.

- 1km satellite view (smallest is 2km right now) - Information on how to start up a weather reporting station in my location. This area is very prone to microclimate conditions, especially in the winter months.

Verbatim Comments continued

1. Video cameras monitoring river levels. 2. Add photos to site showing what levels of actual flooding in past correspond to current water levels on prediction. 3. Add expected rainfall to water level prediction site and how inches corresponds to flood levels predicted.

*A #1 pet peeve with NWS-Cleveland Office for several years NWS-Cleveland cooperated with major Paging Companies (PageNet and Arch) with NWS Sending Emergency Weather Alerts to Alpha Pagers used by Fire, Police, and EMS Departments. (Paging companies provided the Data-Cast 'slots' in the pagers, and supported the program at no extra cost to the emergency services that subscribed to their paging service.) NWS-Cleveland *suddenly* discontinued their end of the program - NWS just said 'We won't be providing the 'alerts' any longer.' This 'was' one of the *best* systems ever created to almost instantly *alert* members of the Emergency Services...There were many times my pager would alert for a Tornado Warning a moment or two *before* the public Weather Radio would sound off! *Shame on Ya* for stopping the program!*

A data process where various hydrological fields can be exported to GIS formats. Flooding information could then be super-imposed at the parcel level.

A phone number for forecasts is needed when no forecasts are listed on the web site so we can get timely information to protect life and property.

A weather station at Suwannee River State Park.

Access modes - good. Formats - Compatible with various hydraulic and hydrologic analysis software (e.g. HEC-RAS)

Access to data base information (monthly, yearly) by county. Perhaps assigned ID number for co-op weather station to allow access to data bank.

Add data to a sub carrier on the weather radio.

Adoption of national common hydraulic and hydrologic models and databases between federal agencies charged with flood forecasting, management, emergency response and environmental management.

All information each weather station has available in the public domain...Such as GRLI2, my weather station.

All levels of NIDS raw data separate by site and all national in one file. Lightning data - in graphics mainly.

Allow users to be notified of river stage conditions via text messaging or email. Allow users to create a profile that would result in messages being sent upon a certain criteria being met. An example would be I want to be notified when a certain river reaches a certain level at a specific point. Thus the user could be notified of dangerous conditions via a text message when they are not able to log on to the Internet.

An 800 number to dial up current conditions and 24 and 48 hour predictions. I would even use this service if I had to pay for it. (900 number?) The USGS discontinued theirs, never had predictions, and is in some kind of dispute with the Pittsburgh District Corps of Engineers. I used the USGS site for my river information before this dispute, now local river levels are not immediately available there.

Verbatim Comments continued

An automated means to notify emergency managers of alarm/threat levels of rainfall/river stages that can be selected or determined by the emergency managers. E.g. - > 2 inches of rainfall upstream from my location and > 2 inches of rain in my local area.

Archive storm total graphics for a period of time after a major storm.

Archived river stage and rainfall data from the local office is especially useful.

As a ham radio operator and Emergency Coordinator of Cocke County, Tennessee, as well as a packet radio operator, I think that the ability to get information via packet radio in a text format would prove most useful! Packet operators can also send wx information to the NWS Offices thus adding to the information the NWS needs to make accurate forecasts and compile information. Packet radio is again becoming the premier mode of information since 9-11 and it is the most accurate of all ham radio modes. Also, to have ham operators at the NWS Offices taking reports from hams out in the field via voice is very important. I feel that we hams can help out more then you realize. Just ask anyone who works for NWS offices in tornado, hurricane, and flood prone areas.

As I live in an area where the normal stream flow = 0.0, the river forecasts and conditions are not meaningful to me, but every rain event brings a flood of some size. Therefore some of the questions were not applicable, but there was no place to indicate that. 'Don't know' did not seem appropriate. I answered based on how well the information could be used in teaching at the University.

Automated call down procedure for quick response or information dissemination.

Automated email for marine radio.

Automated email for wireless PDA applications to include graphics and source information. Also need to consider text messaging for phones and pagers.

Automatic email notification of projected bank full or flood stage river levels for selected locations.

Automatic e-mails of emergency information.

Automatic subscription to email. Automatic subscription to host. (We have manual subscription known as Z360 exchange' but it's not automated. If new products are needed, we can't easily submit a list for automatic processing)

Better access to flashflood guidance data.

Better information on the river stages up-stream from the point in question.

Cell phone notification.

Cellular messaging or similar for 'customers' that sign up for electronic notification of various events. A person could sign up for electronic notification of certain events in a specific location. Since access to the internet and NOAA radio is not always possible especially while traveling a messaging service would be ideal.

Verbatim Comments continued

Comma separated values ASCII files.

DBF is great SPSS is great ASCII delimited with pipes ('|') is great. Excel files generally [slang].

Decrease the acquisition time of hydrologic data from GOES satellite to AHAD or AWHIPS.

Doing an excellent job on keeping the public well informed of potential weather hazards. It is up to the individual to make use of the data supplied and make good use of the information at hand to save lives and property. As the saying goes...'to be forewarned is to be fore armed'. Thanks for a job well done.

E-alerts.

Every time I visit your site, all the formats are beneficial for information and presentation.

Excel.

First, I will say that I have found the river gauge information to be of much benefit to me as an Emergency Manager. I am able to monitor water level post weather event to determine impact on the community. I would suggest the following; The river gauges use to have the ability to look at previous river levels. They allowed up to 30 days previous history. The river gauges no longer allow you to collect or chart that history. That was beneficial in developing and examining information post an event. Secondly, get rid of Greenwich Mean Time (GMT) or at least provide local time zones. It is a pain in the rear to try to convert the time zones. Other then that, I have found the site to be a useful tool for me to efficiently monitor and protect my community.

For people in hurricane prone area's they may like to see the forecast storm surge.

GIS shape and DEM files with overlay opportunities to build your own prone areas for site specific locations from a much larger map...a zooming type function I guess you could say...and allow for point and click for what you would like added into the graphic...roads, rivers, lakes, property types, etc. Maybe DEM modeling for specific waterlevel potential.

Give higher priority to NOAA radio, especially in rural areas such as where we live. Most of the time, the automated NOAA radio voices are very much behind the event and quite frequently hard to understand due to the synthetic 'voice' pronunciations and mispronunciation. And in this zip code, there is no public broadcast outlet giving factual, timely safety information, particularly at night.

Graphics, warning maps delivered to cell phones with color screens.

Handheld devices such as Palm Pilots and IPAQs.

Have a worldwide map displaying weather patterns. Like Accuweather has. Only animate it.

Here in the Operations Center we keep a daily watch on flooding in the United States, so that we may better prepare ourselves for an emergency response. We appreciate the good work you do. Our request: Is it possible to to receive a daily table (in the following formats: .txt, .cvs, .xls, .dbf, .shp) for the entire United States with the following 16 fields?: 1. Loc Sym 'ID' 2. Loc Name 3. ST 4. River 5. Local Forecast Center 6. Lat 8. Lon 9. Flood Stage 10. Observed Stage 11. Date of Observation 12. Time of Observation 13.

Verbatim Comments continued

Forecasted Stage (for 5 days) 14. Forecasted Crest Stage 15. Forecasted Crest Date 16. Record Stage in last 50 years Similar to the Ohio and Lower Mississippi River Forecast: http://www.srh.noaa.gov/lmrfc/forecast/rva.shtml

How about the riverbug.com? I think some one could make a program like the weatherbug.com, its live information, so why not have a live river table updated every second! LOL, think of the lives you could save! Ex: 1 drop of rain means .0000000000000001 inches gain in river!

HTML (2)

I always watch and check the Flint River for flooding. Without your monitoring of the Flint I would be stressed out every time there is a storm. I'm learning to really trust you guys. I'm also learning the river by comparing your charts to the flooding depth of the river. (Great Job) I use weatherbug.com to monitor storms and it suits me.

I am a professional GIS consultant working for ESRI the manufacturer of ArcGIS. I would love to see more data offered in a GIS compatible format. Thanks.

I am generally satisfied with the information and formats currently provided. Please remember that we in the field can be inundated with too much information.

I do enjoy the informantion I receive from your site. The only changes I would like to see are these: 1. Use terminology more familiar to the public, rather than NWS lingo. 2. I would like to easily be able to 'see' when hurricanes are. Live coverage photos online, whether they be radar, satellite, or the easiest to use medium. Make that page easy to find, and be able to see where the storm is 'right now' (maybe refreshed every minute or so). 3. Some form of communication to transmit storm warnings that is portable. I realize there are web cell phones, PDA's, and laptops. But a method to use what I already have without having to buy something new to carry. Thank you for a great site, and for all the invaluable information you have provided. Continue updating to make your information more up-to-date, and more easily accessible.

I don't know, as long as it is compatible with Macs (Apple computers).

I hate that rain, total rain products are only sent out once a day. I wish we could have updated totals more frequently. At least twice daily.

I have been working with the Wichita NWS office since 1995; they have always provided excellent data and maintained the highest standards of professionalism. They are very proactive in providing training when requested and are willing to work with other agencies to accomplish the mission. They perform the respective jobs, accomplishing the mission what ever it might be as the lead agency or in a support role. This in a time when having high standards is more an exception to the rural than the rule and politicians believe they know better how the job should be done than the people hired and trained to do the job.

I hope it is easier to use than climatic data generated by Polebridge RAWS automated weather station in Polebridge, MT. example try to search for yearly average of climatic data for above mentioned reporting station. Forecasts I go to National Park Service - Glacier National Park west of the divide, otherwise I get a forecast generated for a small town in Canada (approximately 30 miles north of my location). I don't

Verbatim Comments continued

understand with 3 reporting stations within 2 miles of Polebridge why forecasting isn't used to generate a more accurate prediction.

I know some people who rely on the discussions... but I really like the attempts to make all the data graphical. And I think updates are essential because sometimes warnings should be cancelled before they expire...or they need to be extended... sometimes the NWS data seems old... I also think the NWS needs to do a much better job taking credit for getting predictions right… and get the word out ... and when they are not 'right' they need to clearly talk about how difficult it is to forecast and how close they were to 'right'...I think the issue of false alarms should be recognized as being a large category with 'close calls' to be a part of them…and…very few events are actually false alarms...the NWS needs to change their metrics for performance evaluation especially for short fuse weather events.

I like the NOAA web site. This saved my life when the hurricane was moving into Irmo. Thank for this cool web site. I love it. I also have a NOAA radio.

I live close to the Ohio river. It would be helpful if during times when the river is coming to flood stage every 24 hours were too far apart. If these reports were more often we would not need to call the dams for river reports, I know these men have more to do than give us these reports If these reports on your sight were updated at least every 8 hours.

I love the maps!

I really enjoy following your forecast, please keep up the great work!!

I think emergency managers and NWS need a better contact medium at the local level. My experience is the State EMs get the information but the locals do not. We need this timely information for public dissemination. Lake levels at Lake Murry SC. The utilities need to join us in providing advisories to for rivers affected by dams.

I think you have a good web site; I used it when we had the flood on the Ohio River this past week. But the only thing I didn't see was the creek that I live along, which is Middle Island Creek. I would like to see it listed since it is a good sized creek.

I use historic precipitation data to attempt to match indices like the SPI to historic water-level records in wells. I need currently updated precipitation data to bring records to the present to calculate SPI values at different accumulation periods. It would be really handy to have an updated database where you could input the station name, tell the computer the accumulation period, tell the computer the frequency of calculation (monthly, quarterly, etc.) and have the response be a time series SPI value based on the accumulation period. Thanks.

I use local county radar sites very often, excellent program, site, coverage, you have here, and however wish sometimes I could get to the local radar sites quicker with fewer clicks. Keep up the good work.

I use this in determination of construction activities within our city. Sometimes, it is hard to reach the stream gauges and/or the information does not seem to be consistent either in measuring/reporting. Side comment, sometimes I go to other NWS reporting stations, and it is surprising how different each of the local web sites are. Example, getting data from Sacramento vs. Mobile is way different.

Verbatim Comments continued

I work closely with the RFC to prepare stream flow and reservoir operations scenarios in the Pacific Northwest. The working relationship between my agency (Corps of Engineers) and RFC is very good. The regional area over which our agencies have responsibly is huge. The hydrologic conditions vary from other regions of the country. The Corps has responsibility to other customers for environmental and political purposes. Because of each agency's large customer bases and regional responsibilities, both staffs have huge responsibility and are worked quite hard. Because of daily time pressures our joint products sometimes need caveats. It would be great if the NWRFC would have more staff, and therefore more time, to devote to joint partnership to develop regional products to meet both our agency's needs.

I would highly recommend reinstallation of the river monitor for the Deshka River (Kroto Creek) in the Mat-Su valley of Alaska. It gave a great forecast of what to expect on the river.

I would like to be able to receive e-mails relating to flooding in specific geographic areas on my cell phone or regular e-mails. I travel often and being able to know when high water was on the way when I am out of my normal routine would be very helpful.

I would like to have real-time access to the raw data. As a pilot and civil engineer, I'm trained to look at the raw information, as well as the completed forecasts, to confirm local accuracy and applicability, i.e. 'are we getting the forecast results.' I'd like to see raw data in real-time, such as IWDS stations (but faster than IWDS stations report/refresh, and from many more locations, backed by forecasts presented as graphical summaries.

I would like to say that the NWS/NOAA is doing an excellent job overall of keeping me informed of weather related details that I require. It often exceeds my expectations. I do however have just one suggestion, if you could have a e-mail type system where you could send a short message stating the progress of a hurricane/severe weather that might affect my area of interest that would be great.

I would like to see a program where river forecasts and flood/weather information can be automatically sent to e-mail or cell phones. Even for a price. I work inside a Cofferdam; the decision to flood the Cofferdam will be based on NWS predictions. Updates more than once a day would not be a bad idea.

I would like to see a web site for county Emergency Mgt. Directors to provide their input as to what is happening in their county relative to severe weather; snow, rain, flooding, ice storms, etc.

I would like to see better rain gauge data availability, with small time increments or breakpoint, to be used in hydrologic modeling and calculations.

I would like to see information made available for WAP compatible devices so I could have access to this information in the field, just like I can with the Tropical Prediction Centers interface.

I would like to see more easier to use XML links. I cannot access the Xml without using SOAP, and I don't have SOAP installed, nor the ability to install it, and the parsing application I wrote is tiny and doesn't work with it. I would love to see this done on the server-end through a URL string query like: http://weather.gov/current.php?zipcode=32257 http://weather.gov/forecast.php?zipcode=32257 http://weather.gov/warnings.php?zipcode=32257 That would make things a whole lot easier.

Verbatim Comments continued

I would like to see the Pittsburgh NOAA website more like the State College website in terms of showing more information concerning the yearly based weather forecasts like the winter weather outlook and more pictures of weather related incidents in and around the Allegheny County.

I would like to see weather warnings sent out to text phones and pagers. I would like to see more accurate info for specific places during conference calls, i.e. When you say tornados are mainly going to stay in the southeast that doesn't really tell.

In addition to NOAA WX Radio, perhaps NOAA could extend EMWIN to text-pagers and cell-phones and send out broadcast emails of alerts and warnings for specific geographic regions.

In order to facilitate our interface with the current text-only warning system used to provide the information to localities in Virginia, it is necessary to continue to receive text formatted NWS warning and watch products, in addition to graphical and other formats.

Include tide effects on river and flood statements.

Info with Lat. Long on it.

Integrate Local Jurisdictional and Army Corp of Engineering GIS databases into the NOAA GIS database to allow a more detail and accurate flood inundation. I am sure most jurisdictions will share this information with you.

Integrate more oceanographic instrumentation into analysis, certainly in coastal geographic locations but also in areas that draw interest to oceanographic and met. Researchers, for example Gulf of Alaska, Gulf Stream region and Sea of Cortez.

Integrate text messaging directly to Verizon Wireless Cellular Phone customers for warnings/watches.

Is it possible to give the upper gauge reading at the Ohio river dam? It would not have to be to the minute, just the last reported reading from that point.

It does not seem that the automated generation of 'Map of Gauge Site' at Meldahl Dam (Ohio River) is very accurate, as the pushpin is located over land. As a result, it is hard to understand what side of the dam is being read. Are these readings upstream or downstream of the Dam? It would be helpful to accumulate readings from both sides of the Dam to better understand the 'drop' level of the Ohio River at this site, as well as understand the manual manipulates of the River at the Meldahl Dam. I live at a river property upstream but very close to the Meldahl Dam. As a result both the Maysville and Meldahl reading are different then what I actually experience in Clermont County, OH (between Chilo and Utopia Ohio).

It would be helpful to have a reference on what the colors mean on weather radar.

It would be nice to be able to obtain the MPE data is a shape file format.

It would be useful for NOAA/NWS to include data on flood history or flood frequency ratings when providing flood information.

Java applets

Verbatim Comments continued

JPEG possibly or PDF. I am not that familiar with XML. Is this compatible with most computers?

Just try to get more information out to people who are at risk of major flooding in their areas.

Keep up the good work. You guys work hard around the clock.

List servers that would automatically email watch/warning information to a subscribed group.

Location of information: All temperatures, records, etc. are taken from the Natrona County Airport which is ten miles away from the city of Casper, WY where most of the population is affected.

Long Island, New York rivers should be also listed in flood advisories. I.e. the Connetquot River in Oakdale.

Look, I boat on the Ohio River. I want to see how fast the river is flowing not in gallons per, but in MPH. I need to know what the debris field is, where it is and how fast or soon it will arrive. Hitting logs is no fun. I want to know when the locks are going to stop operating so if I am up or down the river, am I going to have time to get my boat home at anchorage or if I need to pull it out. It costs a lot of money to dry-dock and then rewet.

Make sure formats available that will interface with WebEOC and E-Team CIMS type programs.

Make the data verifiable.

Maybe keeping your focus on flooding, but also make a system for snowstorms. Living in western PA, I like to know how bad a snowstorm may be that is coming. I think many in the northeast would appreciate this. You could create levels of severity for Northeastern Snowstorms, other than the Winter Storm Advisories and Warnings. Thanks for your time to read this.

Mdb - Microsoft Database Format.

More frequent updates.

More information should be available (e.g. forecasts) to include a full dataset for download, rather than having to get certain information by pulling multiple files.

More local information. Than just a county warning.

More past data would be nice. It would also be nice to be able to choose what format (i.e., CSV, RSS, etc.)

More specific basin information would be nice but maybe should be done at a local level with NWS assistance. Thanks!

Most information accessed is for small, remote streams in sparsely populated areas and is not selected to be reported on NOAA Weather Radio, automated stream conditions are the only way to obtain remote observations make the information easier to find, have definitions (i.e. 'stage' 'datum' etc.) readily available on same page as observed data.

MS Access database compatible for GIS and MS Excel for reports and graphs.

Verbatim Comments continued

My home office NWS Sacramento has been very helpful in any circumstances that In helping get web pages that I need to use in organic farming in Northern California. And they have been very helpful answering any questions that I have sent them, and they helped me to improve and told me of web pages that would better help me with my weather forecasting for our farms and ranches.

My life depends on your graphs. I live in a very low area and flood before anyone else. Do not change from the graphic you use for river levels. I don't care about any additional access modes that complicate the information. From September 15th I use this site when it rains on a daily basis. I'm flooding when you think the river is going to crest. Keep the graph accessable!!!

MYSQL

Need contact information and downloading availability of current data. We are doing emergency management FEMA and cannot access or contact anyone to get current flood and predicted flood data!

Need more resolution on precipitation and snow depths more reports are needed to generate this more observations and observers.

No comment.

NOAAPORT

NWS must adopt a GIS-compatible format at the earliest opportunity.

NWS servers can't handle hit counts during extreme events. Expand server capability or provide 'backdoor' or exclusive web access for emergency management, city, and county officials.

On NOAA Weather radio...they should describe river stages more often and more clearly...also, do more on weather & your health, like air quality, UV forecast, which they currently don't do.

One of the problems is that there is less data available from both NWS and USGS due to funding cuts to the program. I would like to see the numbers of stations with information increased rather than decreased. I would like to see more solar radiation data.

Our Bandera County EOC is unmanned except during emergencies or rain prediction of 2' or more. Our only county 24-hour monitoring facility is our County Sheriff's Dispatcher using TELETS. Our only other source of 'Alerting' is the NWS Noah WX Radio from adjacent Counties (Medina, Kerr, Bexar) which may not reach all portions of our County. ALL Emergency Services and First Responders monitor our Sheriff's Primary Frequency for alerting and Dispatch.

Over all excellent work with your staff, a lot of time and effort plays into our lives by your efforts, and dedication!

Palm or Portable Handheld Computer Format. Mobile to visually display areas to prepare for Flood, Severe Weather, or other hazardous situations.

PDF (4)

Verbatim Comments continued

Place more observation points along the rivers. Many times the gap is over 50 miles, which is hard for those of us living in the middle section. We would love to have a human voice over the weather radio again. The new voice is better than the old but it did listen more when it was a real person.

Plain text and/or tab (or other) simply delimited formats for very simple client processing of the data. This would make the data more accessible to less sophisticated client (user) software and for usability by less sophisticated or less powerful client devices such as wireless PDA and handheld devices.

Please consider graphics formats and/or graphics compressions that are friendly to low-bandwidth internet users. Our viewers often use dial-up access, and in an emergency situation, we have laptop computers that can use low-bandwidth wireless internetcards to access the internet.

Please list any additional access modes and formats not already mentioned that you would like the NWS to consider making automated data processing more efficient.

Port LDM to Microsoft.

Possibly a method of locating information on specific counties in the USA would speed the access to information, i.e. by pointing to a state and then obtaining an alphabetical list of counties in that state.

Possibly AVI format.

Potential tsunami maps for inundation based upon real time of incoming tsunami.

Programmable alerts for local area rivers when they reach a particular stream flow or gauge height.

Provide direct links to state, county and local flood warning system web pages within specific NWS forecast areas.

Radars. Climate.

Real time or near real time desktop application.

Reports more in laymen's terms.

Separate password-protected web site for emergency managers in order to prevent competition with the public at the regular NWS web sites.

SHEF

Since I lost my home in the 1997 flood, I would feel more comfortable knowing the release effects from the dams up stream. Our flood happened because Oroville Dam let go of too much water too fast and a saturated levee could not handle the water flow. It was also further impacted by the act that protected some sort of beetle. I'd like to see a more truthful model, so that those who live in the Yuba-Sutter area would have a chance to leave! If we'd have known, we could have saved possessions, if not the house.

SOAP Web Services.

Some one needs to continue to focus on 'Real-Time' data in simple machine readable formats, such as delimited text format. It's simple and everyone and their brother can deal with it.

Verbatim Comments continued

Some private firms are moving towards XM radio as an option for storm data transmission - would be interesting to see if that would be applicable to some NWS data.

Something that works! My Storm Watch doesn't! And hasn't for months...seems the problem is in a program somewhere between NWS Charleston and WVOES. County Commission and myself are not happy, could be better program with more weather information than just the rain fall numbers, like: radar, your projected flood mapping, river levels, rainfall levels, etc.

Tab delimited.

Text-based CSV flat file .xls spreadsheets

Thank you for NOAA. It's a blessing!

The ability to download historical data e.g. reservoir info over time into an Excel sheet format.

The graphics need to be improved, the graphs themselves are very hard to read and do not print out well. NOAA service has been instrumental in protecting my property from flood damage. I thank you and our neighbor's thank you. Your predictions and flood warnings give us enough time to move our campers and other possessions before the roads flood after which we cannot get our property out. Thank you.

The GRB Hydrologic Program provides excellent educational services to local teachers.

The hydrology sites are absolutely key to my passion, kayaking. I think these sites are terrific and they represent one of the most useful ways any federal agency comes in contact with my life on a day-to-day basis. Additionally, as I am from Miami originally, I find the NHC websites terrific as well. They are both very key to keeping track of things. If this site needs anything more, I would say an additional river forecast time, or maybe even more PR to let people know that their tax money is supplying the weather knowledge base in this country rather than any commercial source. People who don't have a reason to find the regional sites just don't know its there. I've told many people about these sites; they have enjoyed them, and had no idea these as were available. Great job guys, keep it up. Thanks for all your work.

The information on certain geographic points of the Rio Grande River is incomplete, e. g., reservoir water releases at Amistad and Falcon dams are not available; measurements of water flow in CFS are not available for Laredo; reservoir levels at Falcon Dam are not measured on a hourly basis as they are at Amistad and other points.

The role of GIS systems is expanding at the local government level. GIS formats are in use in a number of public safety computer aided dispatch (CAD) systems and strategic incident management programs (progams for use in a EOC) such as E-Team and Web EOC. It is ESSENTIAL (ie. mission critical) for the NWS to develop devlivery methods for streaming (real time) data in tabular and GIS (spatial) formats which will allow for local governement EOC's and 9-1-1 centers to ingest weather data (warnings, mesonet stations, sat, Level II & III Radar, QPF, SPC Mesoanalysis Graphics, etc. etc.) into systems such as public safety CAD, GIS, EOC, and even 'reverse 9-1-1' systems. These products need to be: 1) in a higher resolution (250m or higher) than is currently available. and 2) in a (GIS) format that would allow for these (and other) systems to automatically ingest the data.

Verbatim Comments continued

The topo/flood overlay is excellent idea you should be commended for, extremely valuable when real time data is applied, issues of crispness of colors should diminish as program is implemented, currently is difficult to separate with color coordination, i.e, purples and reds, you are providing a tremendous service to the people, keep up the good work.

There is not enough river data available through NWS local site.

These things are fine but the NWS should NOT be expending its precious resources to compete with services that are offered by private industry such as broadcasters and Internet providers.

This survey is too long, consolidate redundant questions.

This survey is very thorough! Thanks for asking my information!

TV

Type of technology not as important as standardization and ease of access. Simplicity is better.

Update the satellite images more often.

Use all FIPS codes for watches as done during warnings. A city in a large county may not have the same weather as the whole county. This happens a lot and the city does not know when to alert the public or businesses. Please use FIPS code for cities during watches like warnings.

Use email notifications for all warnings. Update on the hour for flood conditions on the rivers.

Via Web Service standards (i.e., XML delivered through standard programming interfaces), and with maps rendered in vector formats (e.g. SVG rather than GIF.)

VLETS / G- links

Watches and warnings are usually issued after the storm has passed thru on many occasions. This is in large part to the high mountains and the distance from State College Doppler. I do not have a solution but it is an ongoing problem. Flood warnings are are not much help. Our problem is flash flooding.

We need a storm tracker like many TV stations now are using, where you can click a cell and it will show you the direction of travel and approximate time of arrival at various locations. Also some means of magnifying radar images so that cells can be seen clearer and more concise. I am an old man with poor eye sight. To see a hook, for instance in a cell I would need at least a 21 in monitor and probably a 48. Thank you for this survey.

We process data in text file in the SHEF format.

Weather.com

Web base interactive maps showing real-time events and there location. Example...where flooding is now occurring, severity of flooding and current timeline project for future flooding...being able to zoom into street name locations.

Verbatim Comments continued

Web based information is my link to what is happening at my cabin on the New River. However, it does not pin point the Jefferson / West Jefferson areas. The closest comparison is Galax for my area.

Web phones can pick up XML but not all are in color, some form of monochrome should be available for such field devices.

Web-based cellular phone or wireless PDA access would be excellent.

Well, I am very pleased with the website. I primarily use it to determine where and how much snow is falling; the elevation, temperature and whatever else will help to determine which resort to go to and whether or not to venture into the backcountry. With that, the digital imaging is great but only because you have the county lines there (able to see if Kirkwood is getting hit or not).

When Clay County, TX is put in a Warning/Watch, the entire county is put in, not just the specific area.

When looking on the map my eyes are ok, but for some people they have a problem with some of the colors and print. Thanks. I use this information a lot more than my own weather station.

When the dams are releasing large amounts of water (that raises the river levels so as to avoid losing personal watercraft).

Whichever format or graphics you make available, make it clear that the most accessible information is on the top portion of the web page when it loads. Also, to go up or down stream put the up or down buttons at the top of the page, not halfway Down so one must scroll with two more steps to go up or down. Also, though your example of severity of impact map is good, I don't know if it is available right now in the Marietta Ohio area, where we need it now! How do we find this? Is it apparent from the first page of the web site where it is and how to access?

Would like to have access to downloadable GIS overlays.

Would like to see background of AHPS maps less cluttered and add in county lines.

www.emergencyemail.org

XML is definitely the way to go. I'm a GIS programmer for Internet and non-Internet based systems and that would dramatically speed up delivery time of customizable products and services.

XML satellite radio, pager, cell phone.

Yes, please put a hydrology section on your web pages! I do not understand why I see AHPS under Current Conditions. I want forecasts. Not very smart thinking!

Your site is confusing to navigate with alternate forms of navigation throughout (navigation changes from click to click). There is no unification of information into a clear vector. NOAA is like our security agencies were before 9/11... disjointed and not a cohesive unit. You need to unify your message and provide your 'customers' (i.e. taxpayers/local agencies) with a clear product. As a CIO myself, I would first eliminate all the miscellaneous websites and have a central weather 'portal' with all your products available from one centralize place with a unified navigational structure to quickly move throughout the resources. I would also

Verbatim Comments continued

'advertise' this great resource to taxpayers, who would greatly benefit from its many incredible data sources. Overall great job, but the website is very early '90's' looking and has a very 'unmanaged' look and feel about it. Your information is top notched, but its delivery is poor from the most part.

Your survey is too damn long and confusing. Must have been produced by a bunch of meteorologists, not market research professionals.

The following open-ended responses have been categorized based on comment theme.

Q48. Please provide any additional comments on current NWS hydrologic services and/or suggestions on how the NWS could better serve your hydrologic needs.

Customer Service

Cambria County EMA is very pleased overall.

Every contact in NWS (Sacramento and Reno offices) has been exceedingly cooperative and helpful in meeting information needs. Sierra County particularly benefits from the Winter Storm Warnings. I'm not much help on the graphs as text is my preference, some comparative graphs between years are of interest to me, however that is just me, someone else may rely on the graphs heavily. But thanks for asking our opinions.

Have had wonderful service out of the Jackson, MS office that covers the majority of the 15 county areas that our State Agency Waterway District encompasses. From the beginning of my tenure over 4 years ago, Jackson has been there for me. Mobile covers three to four of the 15 counties we serve. They have been relatively non-existent, and non-responsive. By the way, survey ended up eating into more of my time then I could afford, so I just quit answering.

I am very please with the services as currently provided, and even more pleased that there is a seemingly constant attempt to improve those services. From me, a part of the general public, who uses those services for recreational (boating & fishing) purposes, I'd like to say a big Thank You to all involved.

I am very well pleased with the information I receive from the Jackson weather service. I feel very comfortable in contacting the Jackson office, when I have a problem in my county or just need to get expert advise on weather conditions and how it will effect my county.

I cannot get good reception of the NWS radio for the Altus region that broadcasts for our county. I use the NWS radio out of Clinton that I receive well. But it for the most part does not give watches and warnings or Kiowa County. I would like to see a more powerful radio from the Altus region.

I have been very pleased with how receptive the Wakefield office of the NWS has been to the comments/ suggestions of the local emergency management officials.

I have been working with the Wichita NWS office since 1995; they have always provided excellent data and maintained the highest standards of professionalism. They are very proactive in providing training when requested and are willing to work with other agencies to accomplish the mission. They perform the

Verbatim Comments continued

respective jobs, accomplishing the mission what ever it might be as the lead agency or in a support role. This in a time when having high standards is more an exception to the rural than the rule and politicians believe they know better how the job should be done than the people hired and trained to do the job.

I have found the information coming from the Houston/Galveston NWS hydrological department to be timely, accurate and as accurate as the data allows. Our local decisions that have been based on this information have been greatly aided and influenced by their work.

I like the way that the NWS serves everyone with their Hydrologic Services, Information, and other things.

I really appreciate all the help you have given to us in Florida this Hurricane Season. I can only hope we will never, ever need that much help again in our lifetimes. It was very reassuring to know we could go to the computer and get updates often because NOAA Aircraft Personnel that risk their lives every day in Hurricane Season and seem to be forgotten otherwise. We appreciate you tremendously here in Florida and I'm sure many, many lives were saved because of your efforts. I had the pleasure of meeting some of these fine people when I worked for the US Coast Guard at Air Station Clearwater, FL, a couple of years ago. I was impressed with their airplane, equipment and staff then. Now I can actually say I am in awe of them and all they do and thanks for caring!!! God Bless all of you who also work on the ground on computers and weather stations to keep us alert and alive, too!!! I'm sure everyone appreciates you, but sometimes in all of the trauma, we forget to say those two small words...thank you!!!! Ha

I think that NWS is doing a great job of keeping up-to-date with its presentation of data. I think that the data is being presented in an easier to understand format than in the past. Keep up the good work.

I think the NWS is an excellent resource for all hydrological information. We use the resource a great deal during all seasons - flooding, runoff season, snow pack, dry season, etc.... keep up the great work. I'd be lost without your valuable information to forward to all my local ema directors and public safety officials. They depend on my providing them with this information throughout the year. Thank you very much.

I was very satisfied with the updates of the hurricanes hitting the State of Florida this season.

I've been in this business for 19 years and have been very pleased with the NWS's products and services. The local field office has been very, very helpful as well. Note: One of the hydrographs included an indication of the average river level. From experience, this is a very dubious term, especially when interpreted by the public.

None...the Great Falls, MT office does a super job!!!!

NWS Albany is a day late and a dollar short when it comes to forecasts - both in accuracy and timeliness (especially when compared to surrounding NWS offices).

NWS is the one source we rely on for forecasting etc. Current product delivery is excellent.

NWS services have yet to fail to meet my needs. Keep up the good work!

Our needs have been well addressed by the service for the past 24 years information has always been given any hour of time called the people on duty have been extremely responsive to our needs.

Verbatim Comments continued

Please continue the excellent work you do. I have used the NWS on several occasions during some potential or actual emergency events and found the people to be extremely helpful and informative.

Thanks for the great support from the Austin/San Antonio TX group.

The Burlington NWS office serves Essex County and we work very close on a very regular basis. I cannot say enough positive comments about the cooperation with everyone there. I have probably worked with and or contacted by telephone everyone in that office over the years and they are always very helpful and provided me with timely and valuable information to assist me during numerous events, whether it be flooding, winter storms, severe storms, wildfires, drought, air contamination and many other emergencies. I am truly thankful to have such a vast resource readily available.

The Fairbanks Alaska office of the NWS does an exceptional job. We work with them closely and appreciate the support that they have given during times of crisis. The NWS Fairbanks is an integral part of the Emergency Management Community in Fairbanks.

The Glasgow Montana Office does a great job and please do not change anything.

The group located at the NWS Office in Pleasant Hill, Missouri is very good to work with and have tried hard to help us determine flooding dangers in our area. This is a very difficult area to forecast and they make every effort to be as accurate as possible and keep us informed. They might develop additional educational classes for emergency preparedness personnel to teach us not only prediction products available, but also how to incorporate that information into our decision processes and software. Also what can we do as emergency preparedness organizations to help them in their prediction programs?

The NWS does a 10-star job in their hydrologic service / forecast every day. The NWS gets a full complete 10-stars from me. You're # 1. The best. Stay that way! This hydrologic service is a 10-star!!!!! This is the best tool we can have and for your help as well.

The NWS has come a long way in providing weather information, I highly support the every aspect of the NWS, we need to thank the NWS for everything they have done for all of us over the years and how they have improved the forecasts.

The NWS website is very precise and useful. The people who run the NWS in Grand Junction are very helpful and educated regarding the weather. Thank you NWS for all your help!!!

The NWS's performance on all forecasting, warnings and services are the best in the world.

The rainfall prediction information is what is of most use to us in this area. However, one of the emergency managers in the county determined during a long-term study that there is no radar coverage of over 90% of the county for storm prediction because of where the military radar is situated and all the storm prediction is computer generated based on the surrounding areas. This is a problem, which neither the NWS nor we can predict if the military is going to modify their radar to give adequate coverage for the county.

Tough job - excellent customer satisfaction from Missoula NWS - regaining credibility after removing locally manned weather station - Each year keeps getting better.

Verbatim Comments continued

Two things, both probably minor in the overall scheme of things. First, the weather reporting station at Morrisville, VT is almost completely worthless from the standpoint of precipitation measurements. I can recall many instances when it's poured for an hour or more and the station reports zero rainfall. To the extent inaccurate data have an impact on measurement & forecasting, it's a problem. Second, our local weather radio reports weather for Mt. Washington, NH, about 80 miles away. It would be more useful to have that information for Mt. Mansfield, Vermont—much closer to home. Thanks for listening.

Very happy with the NWS personnel and products.

We are a believer in the NWS. They do an excellent job in a polite and professional manner. They trust and rely on their experience and expertise.

We have an outstanding relationship with the NWS Pittsburgh. The staff is always available with very timely information - regardless of how busy they might be.

We have been using NWS information for a long time and have been very pleased with the services and data it provides.

When providing river flood information via the NOAA Weather radio, it can become tedious to hear the same generic information when there are many rivers in an area to report on. I doubt that it is possible, initially, to meld multiple announcements into a single announcement, as rivers may not reach a flood potential at the same time. But once it becomes apparent that there are multiple announcements, would it be possible to meld this information into a single report?

Drought Information

Continue to provide river level info in a timely manner and provide predicted range of possible crest levels. Thank you for this service. It is very valuable to us on (in!) the river.

I work as a wild land firefighter in southern California. I am most interested in rainfall/drought forecasts. Lightening and flash flooding, wind is also important.

I would like to understand the forecasts better for drought conditions. Now that the Southwestern U.S. is in the midst of an enduring drought, I would appreciate a better graphical representation for such conditions, as well as such for the entire country. Also, I am interested in an atmospheric science career and would like to gain insight into the background of hydrometeorology.

No interest in flooding. I am interested in drought.

Saturation levels of soil moistness.

Flood Information

100-year flood indicators are significant, but not necessarily important. That said, it would be helpful in public statements to indicate the tendency of a particular water event toward 100- 'X'-year occurrences. Object is to provide some reference to the citizen about the immediate AND short/intermediate/long term effects of a particular event.

Verbatim Comments continued

A local creek floods often and does cause damage and risk of life and I can't find information on that.

Accuracy, Accuracy, Accuracy, e.g., I observed the Juniata River at Lewistown, PA at 16 ft. on 9/9 16:00. You showed it as 8.7 ft. 'observed' at that time. The format and information you provide would be invaluable if it were approximately accurate. I don't understand the time either. Your graph shows the current observed conditions 4 or 5 hours in the future. I like your site but cannot depend on the accuracy.

Automated flood and precipitation gauging needs to be continued. Our high threats are from severe rains during smaller storms and we need the fine-grained data on rivers to know where floods may be occurring.

Better forecasting and issuance of flood/flash flood watches/warnings for specific counties.

Combining local flood maps with hydrographic forecasts would give clearer information about local impact of flooding.

Current hydrologic services were critical in determining flood danger in recent Pennsylvania flooding, allowing me to determine whether my aging parent was in danger, even though I live in Virginia.

During recent flooding from tropical systems in the Southeast, the Southeast River Forecast Center and WFO's did an excellent job communicating predicted rainfall amounts and hydrologic impacts. Conference calls were held each day to inform users of this information and an email address was provided for specific questions. This was very helpful and useful. Keep up the good work.

During times of flooding or possible flooding you need to keep your pages up to date. Especially during a heavy rainfall like the hurricane that came through last weekend. Your warning and river readings should be updated hourly. We rely on these pages to to determine if we need to prepare to take on water or not and your site let us down over this past 'Ivan' incident. Hourly updates on river forecast and readings, and precipitation readings are incredibly important to people who live along rivers that the media doesn't feel are important. Normally we have been able to rely on your web pages for constant up dates and information that we need but last weekend we were left frustrated and without the information that we needed.

Even though localities are responsible for provide updates for the National Flood Program maps, many do not have the adequate resources to accomplish this task. The accuracy of information is critical in determining the what the true flood stage is based upon elevations. A study needs to be accomplished to accurately provide this information.

Flood prediction for Shenandoah River at Front Royal has been very useful and accurate (we live in flood plain near the power station dam).

Flooding is a major concern in the Yuba-Sutter area each winter. We need warnings from other than 'local' disaster people. Many told their friends about boils in the levees and they loaded up and left. The rest of us were not told anything. We were told that 'there is no flood threat.' NWS should take charge of the information to the public.

For a rural county such as Bandera, which has no local radio or TV stations, yet over 22,000 souls and 2 rivers (the Medina and Sabinal) that have had 100 year floods in 2002, 1997 and 1978, with loss of life and

Verbatim Comments continued

major property damage, the NWS is a vital link for saving lives and protecting property. Anything they can provide over Internet, phone or radio is both essential and appreciated.

For me I have an interest in the flooding along a river. The information provided is over all pretty good. The information provided however seems to be cluttered on the graphs. More information than needed. Like flow rate. Who cares?

For personal use, I am only trying to find out how the flood is affecting the roads. There are details of hydrology that I really don't want to learn. On the whole, I am very impressed with your site.

Great information provided, rainfall events impact on forecast models which reflect correlate quantity with rise during periods of flood events would be a helpful tool to the layman for planning for the various flooding scenarios.

Great site, I use it a lot when in floods in the Grand River basin near Chillicothe, Missouri.

Greater detail is needed when issuing a flood warning. SE Ohio is a very flood prone area, and I don't feel a warning just issued due to the FFG values being exceeded helps the public to respond. Some warnings include mention of a covered roadway or a specific stream involved. However, many times a flood warning is issued for a county with nothing more than... 'Flood warning x county until 6:00pm. Do not drive through flooded roadways.' We in the media are able to call local law enforcement to elaborate on the details for the public. But, these warnings currently being sent can't be helpful for anyone who wasn't watching or listening at the time. And it isn't helpful for a meteorologist providing timely information on-air, or for the automated crawls that many stations run. The info is just too generic. The solution could be to add more gauges to smaller creeks and streams, or rely more on law enforcement and spotter reports before issuing the warnings. If this type of specific information is included in th

Here in the Operations Center we keep a daily watch on flooding in the United States, so that we may better prepare ourselves for an emergency response. We appreciate the good work you do. Our request: Is it possible to to receive a daily table (in the following formats: .txt, .cvs, .xls, .dbf, .shp) for the entire United States with the following 16 fields?: 1. Loc Sym 'ID' 2. Loc Name 3. ST 4. River 5. Local Forecast Center 6. Lat 8. Lon 9. Flood Stage 10. Observed Stage 11. Date of Observation 12. Time of Observation 13. Forecasted Stage (for 5 days) 14. Forecasted Crest Stage 15. Forecasted Crest Date 16. Record Stage in last 50 years Similar to the Ohio and Lower Mississippi River Forecast: http://www.srh.noaa.gov/lmrfc/forecast/rva.shtml

Hi in the last two weeks our area has been hit hard by residual rain front hurricanes Ivan and Jeanne. Your forecasts as to flooding potential and problems has helped many and saved lives. Thank you.

Historical flood events for specific rivers with dates and crest information is helpful.

Historical Information. Hourly rainfall or summaries in the watershed. River level changes over this historical time. So I can compare with your forecasts of rainfall. I'm curious as to what happened to create the floods in the past, so as to be aware for the future. You've got a great site! I really appreciate it; it helps to break the rumors and panics that can occur with the threatening rainfall or snow pack.

Verbatim Comments continued

I appreciate the detailed history of hydrologic records that NWS has accumulated in Texas re: our flood propensity. Keep up the good work!

I could not access the forecast for my creek during Jeanne online - I clicked the red X and no graph for projected levels was available - I know what flood stage is.... I need to know how high it will get so I can move property/evacuate in real time.

I currently live near a flood way, and while I do not feel in danger of losing life or property, a near flood can have a dramatic effect on transportation, etc. By the time you have stated that my area is near floor stage, I am trapped at home. And this occurs 4 ft prior to flood stage, so I have to look for the information on my own. Generally, I could not live with the service you provide. It isn't perfect, but after several years of recordkeeping and several flooding events, I can pretty much tell when I'm in trouble. Keep up the good work.

I envision a NOAA or ACE spokesperson with river maps and crest charts outlining the effect of a flood in each area - complete with crest times. The flash floods (Ivan) got great coverage and it would be nice if the local news would take the rivers as seriously. Early Saturday morning, we helped friends of ours (who live by the Allegheny River in Freeport) and we could not find any station with solid crest information for our specific area. We were hanging and wondering if we should evacuate her family. An ACE or NOAA prediction on the local news would have been great to have.

I find that there is often inadequate distinction between 'flash flood' events and 'river flood' events in NWS warnings. To folks familiar with the difference, this is not usually a problem, but to the public in general I think it is often misunderstood.

I have found your website useful for tracking Delaware River conditions in Callicoon, New York. I lost a trailer in 1996 due to a major flood and as of today (9/18/2004) it looks like I've lost another one. Being able to check on conditions gave me some some insight as to what was going on before my husband drove up there and will allow me to monitor river conditions so we can determine when we'll most likely be able to get into the Upper Delaware Campground to salvage what we can. It's very hard living 2 hours away when you can't reach anybody by phone for information. I was able to stay apprised of the situation today during the flooding.

I live along the Delaware River and use the flood info to save my property and person. I listen to the NOAA (162.40 MHz.) radio. It is very hard to understand the flood levels and when the river will crest forecast. Can you make this clearer??? The local fire and police need to understand what is meant by 'flood level' and above 'flood level'. They spread wrong information by (i.e. 40' above flood level was told to us by the Upper Makefield FD) not understanding that the flood level in Port Jarvis is not the same as Washington Crossing. I also use the web information until the power goes out. NOAA is the BEST to get river level information when it is on the rise. I only believe your reports.... not TV or comm. radio or local fire, police, or emergency management. Thanks for all the help with Floyd, Ivan and now Jean.

I live on the Wateree River. Our road floods when the river level is 22 feet at the gauge on Hwy 1. I would like that added to the Impacts noted on your website. The accuracy of the forecasted river level does not

Verbatim Comments continued

seem adequate. Is there any way of increasing that accuracy? I'm assuming that you are being informed about what Duke is doing regarding lake levels. Is this assumption correct? Is there someone that we can speak to directly with questions? Thanks.

I live very close to the Monongahela River and anytime there is a lot of rain I am always on the NOAA websites. I prefer it to the weather on TV. They never tell us about estimated levels until it is almost too late. Please never remove this information from your website...it is very important to those of us who live 30 or 40 feet from a river bank.

I need to know what the water level would have to be when it is on my street. Thanks.

I need to know when the river is above flood stage in a specific location, what does that mean in terms of flooding to cities down stream. It will help in deciding whether to evacuate.

I put it the wrong place in the survey. But I think when the river is coming to flood stage 24 hour reporting is to far apart to react to raising water.

I think Hydrologic Services does an excellent job. The only improvement I think could be made would be to have more frequent river updates when a flood warning is in effect, especially river flood warnings. I work for at a TV station where we are on the air morning, noon, evening and late night. When rivers are rapidly rising, I don't have much faith in latest river stage reports that are 12 to 24 hours old. Most of the time, a daily update is just fine, but during flood events, it would be nice to have updates every 6 hours or so only for the rivers with warnings in effect.

I think the NWS Hydrological graphs are good in their present form and to give the information that is needed. When there is a possibility for flooding, the forecasting what may be the possibility of flooding at an area and how high the water may get.

I think you should utilize % possibilities over things like 100-year flooding event. For the most part people look at this and say it happened last year so we are safe for another 100 years versus the reality that a 100 year event could occur on any day of any year. For the most part I am very pleased with the Hydrological data, however, I have found that the computer-generated predictions in the past have been extremely high, i.e., way off the mark. This has gotten better but could still use work.

I would like to see forecasts be a little clearer. The rain from Ivan was forecast as a warning, then the warning was removed, the on again and the cresting levels increased by half foot amounts until it finally did. Was it that hard to figure out??? The the recent rain forecast was one half to and inch, then one plus, and so on. But I will say that you erred on the high side with predicting the creek would go to nine feet and it seems to have stopped slightly below. A half-foot miss, either way is ok. Two feet is unacceptable. Make the color is your graphs go from light to dark, don't mix them up, red is slight violet is heavy, yellow is minimal...yellow, violet, red. And don't use the same color for below flood stage and above as one bar graph did. Yes you'll never be absolutely certain how the wind blows or which cloud will dump the most rain. But don't say nine feet, if it's going to eleven.

Instead of giving comparative information with flooding such as 'this is similar to flooding in May of 1996' put into perspective of recent floods (within the last year or 2) in addition to the more historical data.

Verbatim Comments continued

It would be helpful to me if there were a faster, easier way to tell river level and flood stage and if they were if they could be updated more often. Several times info for Lower Little River at Fort Bragg was not available. There used to be a very easy to chart that had 1 column for the flood stage and 1 column for the current river level. If it still exist it is difficult (impossible) to access. Little River floods the road in front of our house in Riverbend and knowing the river level enables us to leave our vehicles where they are high and dry. It also gives us time to plan activities since we have to use a canoe to get to the vehicles when the road is flooded.

It would be very helpful to have flood warnings and crest estimations made in a timely fashion.... not raising the crest a couple of feet every time the first estimation has been reached. Or even worse, as in this weekend, forecasting a crest just above flood level and then raising it to several feet above flood level after everyone has gone to bed thinking that they are safe. We watched television news at 11:00 PM on Friday where the crest was predicted to be 38 feet, well below where it was a threat to our family. In the newspaper on Sunday the article said the crest was raised to 42 feet at 10:00 PM on Friday. Were media people notified? If not, why not? By the time we received information that the water was going well above the forecast of 38 feet it was impossible to get through intersections, which had already flooded. River crests were predicted with amazing accuracy until this year. What's up? It seems that in the past the crests were overestimated at times, but I can remember none that were this v

It would be very useful for us if NOAA/NWS would include flood history and flood frequency data on all forecasts and reports related to flooding events. For example, this flooding represents a 10-year event, 25-year event, 50-year event, etc. Having this data would be very useful in a practical sense, and would allow us to better calculate Benefit-Cost analysis for planned mitigation projects in our state (Vermont).

Keep it simple, and quit changing product headers all the time. Also, the Flood Watch for Flash Flooding is confusing to people. It should still be Flash Flood Watch, no matter what code it is sent under. There seems to be too many products for events, and its difficult to remember which product is giving me which information.

Let me start by saying the information you provide currently is great. Don't stop. However, my constructive criticism is as follows: I have noticed that as flood events begin/are in process the information frequency drops off. More specifically, river gauge readings are not updated and flood predictions are not updated in a timely manner. In my borough we are somewhat downriver. It is helpful to know where the crest is, is it as high as predicted and how long is the river going to be above flood stage. I have often felt you do a great job on your website of warning of upcoming flood events, however as that event is occurring the information you provide is not updated, leaving folks in the dark. Additionally, on the longer-term predictions, I like the idea of a worst case and best-case predictions, and some information on the assumptions that were used for those predictions. Another suggestion is to organize the precipitation data by watershed not just by county. Tying the predictions to the weather is

Living along the Cheat River since 1986, this site has been very instrumental in our preparation for flooding. It's a very important tool in deciding what measures we need to take in our preparation.

Many people are affected by the Steinhatchee River. We would like to have up-to-date information regarding Taylor/Dixie Counties and this river.

Verbatim Comments continued

Most important to your best guess of what the river will rise to is more frequent information of your best guess. It's frustrating in the middle of rising water to see a report that's 12 hours old, particularly the text reports. The text report would better serve us if it included information specific to each river in our area, as well as the impacts of reservoirs dumping water. Right now I go to look at both of your reports, then go to the army Corp of Engineer site, to get my best estimate of when the water will go down and when to do any work on the water. Also more information to the general public is helpful (getting information to the media) as most recreational boaters are clueless and don't understand the effects of rising water and increased flow on docks and boats and boating in those conditions.

My evaluation on living working in areas of rapid (e.g., flash flood conditions, high likelihood of loss of life, say peak reached in under 2 hrs, commonly in less than 45 minutes) where forecast ability (in terms of reliability is critical yet, potential accuracy is small. While having the ability to forecast conditions of long-duration events may seem appealing (to reduce property damage), flashy events with high potential for loss of life appear to have less focus both at NWS, USGS, emergency managers, etc.

My house lies in a 100-year flood plain. My wife and I just found that out last month and will all the hurricanes, we were concerned. Even though we do not need flood insurance, we'd definitely like to have more information about the chances after each major storm.

Notification by email of prediction of bank full or flood stage for selected sections of a river.

On an average everything is easy to understand. There are a few of the river flood stage maps that I find a bit confusing, but are above the standards of many other maps that I have seen in the past with other websites. One important note- Many warnings in my area for river flood, hurricane, tornado, etc., have been issued and my weather scanner has alerted me right away of the situation, but the television many times has scrolled across the bottom of the screen without any information. For many people that do not have any other way of obtaining this information, it could result in a very serious situation. I enjoyed being a part of your survey and I hope that the information that I have given you will help you in further developments of your program.

On current river gauge maps, the data as to 'flood level' at the gauge has been eliminated. This takes out any reference that a viewer has as to what is normal or not. My local gauge is downstream a couple of miles, but if I know it is going up and over the normal pool, then I can take action. Without the normal pool data being listed, it is difficut to know wheter to worry or not.

On river flooding forecast, the max flood height allows people to prepare. The present x.x feet is helpful because some people know at x.x if they will be flooded. Also have noticed that since the NW region has taken over forecasting creeks from the local office that the forecasting model is not as accurate as previously for Ellicott Creek in the Buffalo NY area. Model seems to expect fast rises. like Cayuga and Buffalo Creeks vs. the 24-36 hour rise.

Once and for all, Flood Watches and Flash Flood Watches need their own bulletin headers. When stream and river flood warnings are issued, the text product on the FOS needs to be easier to read. I would suggest tab-lineating inundation affected structures.

Verbatim Comments continued

One of two ways: More gauging stations. We respond to flood events over a 500-mile river route. Only a few streams are gauged. More gauges will help our response. Extrapolated hydrographs. Streams rise and fall at different rates and respond differently to to rainfall intensity/duration. Because of the lack of gages, we often have to extrapolate, from a gauged location or a field report, to another stream with a different hydrograph. Professionals could do a better job than we do. The information available on the web has been extremely valuable to the Alaska Railroad. We also appreciate the ability to call forecasters and speak to them real time. This information allows us to operate the railroad with enhanced safety and service. Thank you.

Other rainfall/flood excedence probability (2, 5 10 25,50 yr) data should also be included. Urban drainage design not necessarily is 100-yr based.

Re: Flood Severity: how high the water stands is one thing; how fast it moves is another important consideration of severity. Re: River Stages: the depictions were good for showing levels at and above flood stage. Missing was depiction of low level, dry conditions.

Real time information on river flood stages.

Review your NOAA weather radio flood statements and river level statements. They are often jumbled and unclear, due to your computer-synthesized voices. Does no one listen to them before they are placed on the air? The recent New Jersey and Connecticut statements in mid-September were complete gibberish. Speed in getting out information is of no use if no one can understand what you (or the crash-dummy voices on your radio) are saying.

Same flood comments as the last field.

Service is excellent. I live between two rivers and this information helps prepare for possible flooding. It has been very accurate. Thank you.

Sure, when the Blackwell E.M. or the Kay County E.M. calls the office and requests a Flash Flood Warning, it would be nice to get it sent over the weather radio in a more timely fashion...like in 2 or 3 minutes as opposed to 30 to 45 minutes as I have seen it occur recently! In addition, I have looked as some of the graphics used in this survey and it is really hard to state that I would use them.... or have used them when I didn't know that they even existed. I will state that the new enhanced web site is great!!!!!!

Take time to explain the forecast of river flooding, seems that it gets mixed up with flooding that it is going to happen but when. We forecast the river to be at 23 feet by 9am what does 23 feet mean to the general public. What damage will it do? The general public usually waits till their feet are wet before they leave a better understanding of what the forecast of feet really mean as in a time line. At 2 PM the river will be 2 feet before coming out of the banks or 17 feet at 5 PM the river will be at bank full or 20 feet and so on. Maybe the folks that use the river, as a gauge will understand the rational of bank full as to flood stage just a thought.

The area I am concerned with experiences flash flooding more that the long term river flooding. The extended forecasts would not be of great use to us. The short-term forecasts in the graphical form are really an improvement over the past. Keep up the good work....

Verbatim Comments continued

The current products are fine for people in a familiar area. Ease of use when traveling, especially in unfamiliar territory, needs to be expanded. A warning that Brushy Creek is about to flood doesn't help someone who isn't completely certain of his own location let alone the location of Brushy Creek. At the least, State and Federal highways that are likely to be impacted by a flood should be named (with distances from cities/major landmarks) in warnings and in watches when a warning is imminent. While I have seen some of this in the text notices, very little of this is transmitted by the mass media (radio in particular). The ability to zoom in to regional detail maps in great! I like to point other 'common folk' to NWS web products instead of relying on the untimely dregs broadcast by local mass media.

The NWS furnishes very good information on a timely basis to our county and we appreciate it very much. Any system that will enable forecasters to forecast river flooding more accurately will help us that have to deal with river flooding.

The small stream, river, flood etc. advisory, watch, and warnings are confusing. We are able to understand the tornado watches/warnings, thunderstorm warnings. The flood categories (at least for our county) should either be watch or warning, easier for us and the general public to understand.

There should be better and easier explanations for applying meaning to the '100 year' flood. Most people do not relate to a 1% chance per year. Once flooding has occurred, it becomes meaningless. This was or could be a 100-year event —— who cares? Better to concentrate on what's actually likely (amounts) to occur.

There's still a lot of confusion between longer flash floods (6 hours+) which are handled with 'Flood Warnings' the same way long-term river flooding is handled (also with the 'Flood Warnings'). It would be nice if we could have separate products for all flood events so as not to confuse them with long-term river flood events.

This data is important to our baseball league because several of our fields are right off of flood prone rivers.

This survey was pretty much about graphics and not data. Would like to see NOAA focus on providing data, in an easy to use machine-readable format. I do not use any of the products you've shown. I need to know water levels, and flood stage levels in 'Near Real time' and I do not need all this frilly stuff.

Twice you have used the 100-year flood term and it only confused people. Comparison to previous floods is likely better.

Use '1% probability' instead of '100-year flood', to offset the perception that if such an event occurred last year, it will not reoccur for 99 more years.

We have a summer cottage along French Creek (near Meadville, PA) and rely very heavily on the info you provide on water levels of the creek. We have flooding every spring and your water level readings are extremely helpful in letting us know when we can make the 1.5 hour drive to open our cottage for the summer. Although our cottage is up on 4-foot tall cement piers, this past week we had flooding that was so bad it entered the cottage. The information you provided let us know as soon as the water had receded enough that we could get in and begin clean up. Without your website, we, along with all of our cottage neighbors, would have wasted a lot of time driving needlessly back & forth to see if the water had receded.

Verbatim Comments continued

Your information is so accurate and so up-to-date that we were able to get in right away and clean up before any more damage could occur to our furniture, belongings & structure. All I can say is thank you, thank you, thank you, for what you do.

We have no major rivers in our county (my area of concern) so we don't get involved very much in some of the related issues. We are much more concerned with flash flooding, etc.

We used this information in Yardley, PA this past weekend where we had major flooding. Everyone involved really needs to get his or her information from a single reliable source. I found this page the most accurate of current conditions. Of course the forecasting is a bit off. I think using a range is better. Also I would like to see an impact graphic (GIS) modeled topographically with streets so we can better assess the impact in our specific community. We rely on the Trenton, NJ station but flood stage at Yardley is lower than Trenton, NJ.

Website information on river gauges and stage is not real time and the delay makes it hard to keep up with how current precipitation is effecting flood potential.

When you issue a forecast please be more specific on the location of the warning. Just providing text messages stating northeast Pima County is under a flood warning is not clear enough. You need to include towns and river reaches that may flood. Please give credit to the agencies that are operating the monitoring sites that you are displaying in your graphics. They are out there risking their lives to collect accurate flood data. They and their cooperators should get credit.

You guys do a good job. My biggest problem is with the river flood warnings having weird wording in them. They look and read very computer-generated with short disconnected sentences. This wasn't always the case — several years ago they seemed to read much nicer. Also, I'm confused when river flood warnings get commingled with flood warnings for whole counties. Since I'm assuming the river isn't flooding the whole county, it looks like y'all could find a different way to keep river flooding separate from regular flash flooding.

Your services are very useful as we live in a flood-prone area where sole access is often impacted. My only criticism of graphical river stage information is difficulty in reading the time scales shown on horizontal axes. Any way automated readings more frequently taken could be used to approach real-time information provided?

General

1. Above all, KISS. 2. Please do away with the title of 'Hurricane Expert'—that is a joke! Prediction is such a problem, there are NO experts! 3. Sometimes broadcasters get overly dramatic or emotional about future probabilities—end that! Just give the facts, if any, logically and accurately. Most people, though not sophisticated, are not idiots or stupid. There is always a small number who are, but you probably can't help them anyhow. 4. When power is out (as it often is) the Weather Radio information is essential—I've used that a lot. Some of your men speakers' voices aren't always clear—use more ladies. 5. Mostly, the Weather Service does as well as it can with a set of tough problems. It is good to try and improve, but remember Sgt. Friday: 'Just the facts, ma'am.'

Verbatim Comments continued

1. The information has to get to the public in a better manner. Not many people have access to a computer and do not have a weather radio. I would suggest a local telephone number to call that would update regularly the forecasts. 2. The scale on your AHPS plots are not clear and hard to read.

4 or 5 Graphs depicting the same data but in different scenarios.

A bit hard for us Alaskans to answer some of these questions because we have different products. Also, remember that about 10% of us males have some degree of color blindness, so the Lower 48 flooding and snow pack maps are difficult to correctly interpret. The improvements in Alaska Regional hydrologic products in last year of so has been tremendous. Keep up the good work.

A lot of people can't understand lots of numbers over the radio. Graphical (maps) forecasts seem to be the best for me. Maybe users can select what information they want to see? That way it's not so crowded and overwhelming.

A lot of the services provided I do not personally use. What I have seen is a well organized easy to understand product. Thanks.

A number of the graphics are difficult to understand mainly because of your choice of color. Being colorblind some of the information you were trying to show could not be seen at all. I find that well thought out black and white graphics are easiest to understand for all people, color just looks flashier.

A web page dedicated to providing a knowledge base for the type of information provided in this survey and other services currently offered by NWS. There are so many services, data types, access methods, and other technology that for those outside the NWS it is many times a hit-or-miss method to find out what is available, what is new technology, what the old technology is, and how to obtain/access the data needed. For instance, we have for several years had a network socket connection with Tulsa District to obtain the old AFOS data stream. They did obtain this data directly from the NWS in Tulsa but now use a NOAAPORT. Our plans are this FY to obtain a NOAAPORT here at Little Rock but my question is will that be obsolete in the near future or maybe is already? Or, can I obtain that information another way such as over the Internet without having to purchase and maintain equipment?

All the weather info on NOAA is wonderful to have at one's fingertips. Keep up the progressive work as global warming will only increase your added importance ...

An easy access / easy to understand forecast site for non-scientific folks.

As a farmer with land on a floodplain, I monitor the hydrograph at Fort White, (Santa Fe River). The graphics are poor compared with examples in this survey. I use Netscape 7.1 browser. Major flood line does not show in legend (but does show on graph). Time axis uses odd system of time marks (unlike examples in this survey, which are clear). It's a valuable service, but the graphics (at least for that station on my browser) would benefit greatly from minor improvements.

As a hydrologist, I appreciate someone at the local WFO who can speak my language; especially, when considering interrogation of remote rain and stream gauges (e.g., ALERT stations).

Verbatim Comments continued

As a layperson, I find the maps most useful. I am not accustomed to reading graphics, and find them tedious and not at all helpful. Some of the earlier questions in the survey referred to graphics, which I took to mean maps. As a resident of central Florida, I have relied heavily upon the NWS website maps for following this year's hurricanes. Overall, your website is user-friendly. I appreciate and thank you for the information you provide on your website.

As a USGS employee we have found it very annoying that the weather service passes our stream gage information off as its own. In the Verde Valley of Arizona people have the misconception that you operate the gauges; this has been a source of consternation in that people do not want to fund USGS gauges because the weather service has its own and they are for flood forecasting. We cite your data when used so please show the same professional courtesy. 2. As a onetime collector and now user of NOAA climate data you need to fund an improvement of the gages. I can list about 10 temperature and precipitation gauges that do not comply with accepted placement or measurement methodologies. You need to spend some money to equip your cooperative stations appropriately. All these visual products are worthless if your data network is bogus.

As always love your service! You all do a great job.

As I said above, you do very well indeed.

As stated earlier, the ability to get information via packet radio about all weather related situations is very important to us ham operators. We are willing to work with the NWS on what every you need help with. Our main goal is to help served agencies and our communities and without proper information, we can not do our jobs in a weather related situation. I live in a text-based world on packet radio and the ability to have accurate information that I can print out and get the proper officials is paramount. Please consider setting up packet radio stations at all of your NWS Offices as well as voice communications for ham operators to better serve you and their communities. Hams are self-trained, but lack proper equipment to do the job we signed on for. We are here to help.

As weather 'begins' here on the Northwest Coast, and rainfall in my area is usually rainforest-like in the winter, predictions can be very hard to nail down, until the storms make landfall. Most of the charts and tables shown on this survey will benefit more inland than here. Is there any way to have more examples of possible variations in forecast scenarios for us here on the coast? Most of the time I look at the infrared Java loops of the storms coming in, and guess for myself...or I call in to the local office with my rainfall readings and ask if there's anything coming up that I should worry about.

Because we deal with the public on a daily basis, the information provided must be easily understood at a reading level of 4th grade. Although graphs are easily read, a picture is worth a thousand words.

Better explanations on how the data is gathered. Information on rivers that have dams. Analysis on how different weather scenarios may affect rivers, streams, and controlled lakes.

Better hurricane path projections. Hurricane computer models. Lake level discussions.

Closer cooperation with other Federal Agencies (such as USGS), which NWS relies on for information;

Verbatim Comments continued

specifically GOES radio equipment for stream gages. The new HDR GOES radio equipment has the potential to greatly improve the river forecast ability by providing all information hourly, instead of every 4 hours. What a tremendous benefit it would be to the user community if more sites had High Data Rate (HDR) transmitters.

Color contrasts and clarity of maps could be a lot better. When maps are enlarged the definition of the graphics and colors is usually poor or lost. Quantities should be in both metric and standard for ease of understanding for those like me that are not good at going from American to metric.

Colors on test graphics are not very user-friendly.

Comments pertaining to significantly revised forecasts based on the latest real-time data needs to be emphasized in some manner. An explanation of the products' limitations needs to be included in a caveat statement (additional web link).

Concern: Color graphics can create a problem for people with visual color impairment. There is a large population that is either color blind or partially color blind. Red, Yellow or Green can be a problem depending on shading.

Conditional Simulation is a confusing term. Drop the 'conditional'.

Considering my location, NWS does a pretty good job of forecasting weather and flooding. I do use a satellite imagery web site containing products ranging up to full Pacific basin (28km?) loops to second-guess official forecasts. A link to your full satelite page would be valuable to me.

Could be updated a little more frequently. I've gone on the website and there were times that the info was a few hours old.

Could not comment on section pertaining to snowfall, as I have not utilized it at this time.

Current: river-flooding close-ups need a way (or need a more obvious way) to pan to adjacent areas without zooming back out to national in between. Future: I'm excited about probability/river-levels (the graphs with the black triangles).

Dear Friends - Thank you for the help you provide those of us who are contending with rising and flooding waters these days. We find that the automated 'voice' we hear on our weather radio is often hard to understand - it sounds as though it is skipping over information so that we only hear partial words or 'swallowed' words. Also, when listening to weather alerts, we find it a little stressful to have to listen to a description of the potential problems caused by a certain level of storm before we hear just where that storm is and where it is heading and how fast. Often we are in Pittsburgh — 30 miles away from our farm— and our weather radio lets us know when to jump in the truck to prepare for high water up there. Thanks!

Digital data is more useful for me than graphs.

Do not use the metric system. English system is used in the United States.

Doing a great job.

Verbatim Comments continued

Don't be afraid to use more colors on the same map. Some shades of (say) purple blend into each other. I voted for the 100-year flood info, but I don't believe it (100 year flood) is accurate most of the time.

Don't issue so many 'Severe Weather' alerts. Just because it's raining harder than normal, or putting down 3' of snow in an afternoon, doesn't mean that it is 'Severe' weather! You're like the boy who cries wolf too many times. ONLY issue 'Severe Weather' alerts when absolutely necessary, or a life threatening situation is present.

Due to busy schedules and time constraints any information provided should be quickly accessible and easy to understand.

Easier navigation. I have a hard time getting to the charts and grafts that I want to see.

Educate commercial communicators (newspapers and radio) to use your data correctly or at least to report the source of their data to avoid conflicting predictions of flood levels and crest times.

Evaporation rates (drying) would be useful information for farmers like me. The ability to forecast drying times related to humidity, wind, and sun for a 4-5 day forecast would be very useful in managing our crop harvesting.

Every page of web material has logo space, headers that are beautiful color. These aren't very helpful. I really don't need to be reminded that NOAA is behind the stats. I do not like to read graphs, as will be shown by my survey. Long term prediction are interesting to view, especially when taken in context and with a grain of salt. I'm not so sure that change, for change sake, helps me find the information that I want to use in my everyday life. e.g. the changes in format. It kind-of looks like you guys have different teams working on different methods of displaying information, and one team 'wins' the design contest one month, and the other team the next month. You, of course, realize that you are dealing with a consumer that is curious about the weather and the effects thereof.

Everything that you have is easy to understand if you have some inclination to scientific thought. If you have none some of the graphs are too complicated to read, to many points in one graph.

Find present information very useful. The past information on our recent hurricanes I found very informative.

For one there needs to be a little bit more updates sooner than they are now, also the timing is not as good as it could be, the radars need to be updated when there is severe weather or even heavy rainfall. And one more thing I think the way they have the tropical weather should be explained in our laymans term a little more.. thank you for allowing me to participate in this survey.

For the individual charts of rivers/streams they need to be updated quicker especially when there is a risk of flooding. The maps for each need to be in better detail also.

For what I'm looking for in all aspects of weather in the United States, NWS is the best, bar none.

For whatever reason, I was unable to get the rain/precipitation graphics to download properly, that so I was unable to properly assess the questions dealing with rainfall.

Verbatim Comments continued

Forecast seem to be very inaccurate since the new computer systems have been put in effect...NEXRAD, etc.

Fortunately, I am not color deficient (i.e., color blind). You clearly did not include any human factors professionals in the design of some of your graphics. You depend too much on red/green combinations which cannot be seen clearly (or at all) by those with the most common form of color deficiency (primarily males). I am a human factors' professional (retired) who assisted with the design of many control rooms and displays and we had to take great care about the use of color. That said your graphics are otherwise great and pretty easy to understand. I use all the information as I indicated for my work at Great Falls Park (NPS) in Virginia. We keep a book in the visitors' center with the current river and flood information. I'm in charge of the book (I'm a volunteer) and I appreciate the high quality of your web site.

From my days as a Navy Aerographer (56-67), the quality and quantity of information from NWS has expanded exponentially. Living in southern Arizona, I use your web site almost daily for personal consumption. The graphical interface makes it very easy to traverse your web site to the satellite data, surface data, and upper air charts. Keep up the good work.

Get some continuity between forecast center web pages. For instance, the map showing the forecasts for the LMRFC is superior to the SERFC map, because of the presentation.

Glad you are looking to improve yourself. I believe the following colors work best for charts/graphs. Background use only: Black, Gray, White Foreground (data points, etc.) Any color, however... the more colors that exist, the less brilliant those colors must be. Optimally, it would be less confusing to never use more than 4 colors on any chart/map, and importantly- to leave a lot of the neutral background color showing: just like you did on this survey! Thanks for letting me give an opinion.

Good job and it'sthe best.

Graphic colors need to be more pronounced. A color-blind person has a hard time differentiating shades of colors.

Graphical data to be updated more often. Now it is updated about once every twenty-four hours. I think the NWS is on the right track with the idea to modernize.

Graphics are great, but how do you compensate for people who are color blind, some of the graphics can be tricky to read.

Graphs can be difficult for many people to understand, even though they can also greatly facilitate understanding, depending on how they are set up and upon the comprehension level of the user. It's easy to include too much data, or overestimate the capabilities of the user in evaluating the information. A layered product might be useful, with a simple presentation for those who prefer that, with more complex, detailed information for those who desire more information. Comparisons with 100 year floods are also a mixed bag, as probabilities can be confusing to many who may think a 100 year flood can only happen once in 100 years and who then think the science is junk when such floods happen in close succession. Still, the concept is very useful with proper public education.

Verbatim Comments continued

Great Job!! Keep up the good work!

Great job. Tax money well spent.

Great radar and satellite work.

Great satellite links. Keep past/projected paths of major storms in the archive also. I don't live in Alaska but know people there. I have looked thru the links to get a grip on what's happening there & it's like looking at the red headed stepchild of the website. It needs updating.

Great Web Site.

Hats off to the NWS hydrologic services, now we all just need to work on getting people to take flooding more serious and not drive through high water. You all are doing a superb job! Keep up the good work. How about hiring 'Service Hydrologist' that understands hydrology.

Hydrograph should be standard (the same) at every dam.

I am a just a mom who was worried about her family in Asheville NC when Hurricane Frances blew through. Your graphics of the Swannanoa River helped me keep in touch with what was going on in the mountains of NC while I live in Atlanta. I was able to understand most of the survey questions, but this was the first time I have used the hydrologic services of NWS (watching the Swannanoa River rise!). The Internet was a lifeline for me during that time! (I could tell that I am a very 'visual' person and enjoyed being able to look at graphs and lines!) Thank you!

I am a member of a 4,000+ engineering company and head up a 4-man hydro-met group. We provide original water supply and flash flood/flood and QPF services to several Western States and major metro areas. Additionally, we develop flood warning and flood response plans for communities. The 'new' products in your survey would be easier to use in community flood response and warning programs.

I am a visually/functionally oriented individual. I like to see things that evoke memories of the event under consideration. Meaning is acquired most readily when the object viewed shares similar characteristics with the event. Thus the satellite picture pictures of hurricanes are meaningful to the extent they depict reality. They become confused to the extent that colors must be interpolated sometimes inversely to their associated characteristic. Some of the most easily acquired information can be seen in topographical maps where colors depict elevation. If the event being interpolated through the visual representation of your graphic can invoke the similar response in the observer that the event itself does they your have been successful to that degree. Good Luck!

I am a weather buff as I drive semi across Montana and I find this site a very useful tool in predicting when I will depart and arrive with least chance of problems. Thank you for a very informative site.

I am a Weather Spotter.

I am just part of the private sector, and use the NWS site for weather info, as my job is outdoors and depends on the amount of rain forecast as to what we may or may not be able to get done that day. Some of the graphs are a little confusing.

Verbatim Comments continued

I am not a professional Hydrologist, but because we are in the travel business, and are often asked to advise, it is useful to be aware of current conditions both locally and for various destinations throughout the country. I find the NWS a very good if so somewhat complicated to understand source. The clarity is somewhat obscured to someone not intimately familiar with flow rates and the like, and some of the data eludes me, but I have understood it today. I really think overall the NWS does a rather good job. Right now, especially with the flooding here in PA...it has been a great help.

I am very impressed with the NWS's online products and find them very useful to me. I am always able to find the information I need. Please keep up the good work!

I and many others in my area (wide discussion) quit using NOAA radio when voice change. Could not understand voice. This made it useless at the best of times, and a danger to waste time listening to it in times of danger, when it was most needed. My emergency radio (and many others)has been cut off and gathered dust since this time. I often wondered how many lives were cost by this action of NOAA. Many I talked to, contacted NOAA. Others and I found NOAA only interested in doing things their way. They were not interested in the lives that it could cost; only the fact that a message not understood was cheaper than one that was understood. The people I contacted made this very plain to me. Thank you for trying to serve us, instead of yourselves. This is a wonderful change, and what you are there for. Please keep it up. It is nice to know that some one is running things that care about people's lives FIRST. Please forward this up your chain of command.

I appreciate the good work done. Thank you for the forecasts and hurricane warnings we receive, as well as storm warnings.

I believe my generation (> 55yrs?) thinks in feet and inches, not metric. Perhaps the two should still be used, and the metric phased in as the younger generations have been exposed more and more in years one to 12.

I can easily read the Green Amber Red models- Shadings of colors at a glance could be misinterpreted. The only challenge with the green, amber and red is if the observer is colorblind. I would think they would not see what is meant to be described. I enjoy browsing your sites and use them daily to make predictions for my Motor Lifeboat Station at Neah Bay. Thanks for the great work!

I don't have a river running thru my county. We do have a small creek, which is dry most of the time. I believe the weather service is given us the best they have had to offer. Sometimes being on the outer limits I understand it is hard to get an accurate

I enjoy your website. I think NWS does a great job providing information.

I especially appreciate the fact that the information provided on your website does not include advertisements. Thank you to all of you for your good work.

I follow the NWS as a hobby. I am just beginning to learn how valuable it can be. I live on Lake Erie.

I found out the ease of getting Hydraulic information from web sites.

Verbatim Comments continued

I get a great deal of useful information from your products. Some of the info presented in the survey would not be useful to me at any given time; however, that should not be construed to mean that it is not useful to anyone. It's just that I am a regular person interested in how the weather is going to affect myself, my family, and my property. I can see that this information would be of great use to certain groups and individuals, and you should continue in your efforts to make critical data available in whatever form you can to help people stay safe. Keep up the good work!

I have a brother that travels and friends all over the country, some times it very hard to figure out how to check weather in other areas. Zip codes and correct spelling is sometimes difficult, for areas of the country I not as familiar with. I found I it very easy to track what was happening to my friends during these last three hurricanes, because of your sites. Thank you!

I have a problem with the rivers tab with URL http://weather.gov/rivers_tab.php page. No map appears! This makes it profoundly difficult to use. I was able to use it by guessing at the URLs which showed on my browser's status line to get the area I wanted, but it surely isn't as obvious as you intended.

I have always had an interest in weather and how it affects the environment. I use your web site, real time radar loops, Mt Washington Observatory site and the USGS web site everyday. I don't need to watch TV forecasts because I often have more up to date information. I use the above sources to monitor what is going on in NY State where my parents live. People over eighty love to talk about the weather. I have even called them to ask about a thunderstorm that just went over them because I was following it on a radar loop. I like your new format for the national watches and warnings map and particularly like the way I can now have pinpoint forecasts. I rely on your web site to make travel and vacation plans. Your web site constantly amazes me. I was able to view a hurricane track (the only time I have ever seen the eye in person) that passed over my house in 1956 when I was ten years old. It brought back a lot of memories. I still remembered it like yesterday. Thank you for the outstanding services that yo

I have been a promoter of the NWS for many years and find them to be very professional and accurate in the information that I receive.

I have been keeping rainfall record for the past 20 years and a spotter for severe weather for my area. I find your site filled with information and very well done. It would be hard to improve on a system that works this well.

I have been using the data at the old: http://www.nwrfc.noaa.gov/river/station/flowplot/flowplot.cgi? TOBM8? 0? 1? 0? 1? 0 and river data: from //www.nwrfc.noaa.gov/river/station/flowplot/flowplot.cgi? LYDM8 and climatological data from: http://www.wrh.noaa.gov/cgi-bin/Missoula/ msoobs?site=EURM8&type=02&fmt=DEC&src=rgl&hh=168&gh=96&gy=1 I also regularly access the various sites at the old: http://www.wrh.noaa.gov/Missoula/nwsomso.sfcrgl.html With the new site formats and broken links, I can't find any of the data I'm used to. None of the new formats even address the conditions in the Kalispell/Eureka MT area.

I have only needed NWS information for my work since I took my current job just over a year ago. I am pleased with the graphical forecast information on the web. There is a lot of information and there are

Verbatim Comments continued

almost to many ways to look at it. I would like to be able see a web page with a the 24 hour QPF, 2 day QPF, 3 day QPF, etc. In our particular county, we watch our rain gage antecedent conditions carefully and if certain 30- and 7-day intensities are met, we want to watch the 1, 2, and 3-day forecasts. We have very little lag time between the rain event and flooding when it does occur. Clear easy to read short term QPF information would allow us to direct the publics attention to specific web sites where they can see for themselves if a certain threshold of the short term forecasts will be exceeded. We will be able to alert the public of 30- and 7-day antecedent conditions easily very soon through our local OES systems. We have a harder time with nearer term warnings because by the time the warning would ge

I just check your site daily for our weather. We never have floods. I don't understand all the graphs I just want to know whether to wear a coat or not. I also keep track of the weather where my kids live. I do enjoy your site.

I know radars are more accurate than they once were, but they are less accurate the further from a radar site one is. Thus, the usefulness of the information is reduced as well. There are areas where radar indicates rainfall, but it is actually occurring nearly ten miles away, particularly in the last or outer edges of the radar range. I know, because we are on the fringe area of 3 radar sites. Each shows rainfall in a different area, which may or may not be accurate. It can be none of the places is receiving rainfall.

I like and have used the AHPS a lot, and pass off information to our towns in Kennebec County. Keep up the good work!

I like the website provided. I use it in my classroom, but as a teacher and as a personal user, a lot of the information, albeit useful is not very appealing. With today's abilities to use better graphics to express information, I would suggest making it look more attractive. Also, highlights of the week or the important and current events happening now (hurricanes, flooding, etc,) they should be accessible immediately and not have to search so much for the information.

I live in a mobile home 'Lorain County Ohio' and rely on my weather radio for tornado warnings, etc. I would like to hear the audio tone/voice warning repeated, not just once at the first instance of a warning. An individual may not hear the first audio tone message and that could be the difference between life and death , it's the tone warning that alerts us NOT the scrolling message on my receiver that follows. If it bothers folks out of the warning area, I'd rather be annoyed then dead, don't ya think!

I love the maps; I would like to see some of the maps that you used in this survey on the NWS websites. Great work also on everything you guys do...props go to you!

I monitor NWS for local weather, rain, and tropical storms to give me a better idea on making plans for work, leisure time and the possibilities of evacuation during tropical weather. I have been learning how to read the maps and graphics just for my own knowledge. I've used the glossary on the NWS site, as well as searching on line when I didn't understand terminology. Am becoming a bit of a weather junkie here lately. I'd probably been able to give you better feedback on the flood stage graphs, if I had spent more time reviewing that type of thing online lately. Don't have as much use for info re: river flooding here in Charleston, as opposed to the folks in the Mississippi valley. Couldn't give you feedback re: the radio,

Verbatim Comments continued

since I'm hearing impaired. Have friends involved in Emergency Prep here (who work closely with FEMA) so have picked up bits and pieces of weather info from them, as well, when I'd get stuck on what something meant while I was browsing the NWS sites online. Hope you get some decent

I only use NWS Website to track hurricane activity in Florida. It wouldn't be useful to you to contact me.

I really do appreciate the continuing improvements of the information that is accessible. It assists in preparations and expectations. Thank You.

I really use the information in figuring out what flies I need to bring with me to catch my 10 salmon/year.

I recently moved from an urban area to the 'boonies'. While I enjoy the solitude, I have had to sacrifice internet connection speed. My main concern with your web pages is the download speed. As a web designer, I understand the limitations and difficulties involved with proving the public a visually interesting, yet efficient, website. My suggestions are: o Please eliminate background patterns and textures. They are rarely done well, and are a sure indication of amateur web design. o Please optimize all graphics. o Reduce the size of banner graphics. A little goes a long way. I think your new weather graphics look great. I have a background in meteorology, and now find myself a closet meteorologist. Your website(s) have been most interesting.

I spend considerable time on waterways in the Middle Atlantic Forecast area and instant access thru is alternate means should be considered.

I spent 5 years at the Air Force Global Weather Center and as a station forecaster for 3 years and the NWS products are excellent both for a knowledgeable individual and for a novice.

I think the NWS does a good job over all. I would like to see more yearly data a summation if you will of the events to date, amounts to date.

I think they are doing a good job.

I think ya'll do as good of a job as possible.

I think you are doing a wonderful job...Thanks for asking!

I think you guys do a great job! Should be commended!

I think you guys do a great job...I love trying to predict the weather using your data...makes you pretty humble real quickly.

I think your present website is good as it is.

I think your web site information is fantastic already overall. Any additional information that you plan on providing is just icing on the cake, so to speak.

I use historical data for analysis as well as rely on forecasts for planning fieldwork.

I use hurricane information primarily. Would be nice to have a complete map of where the hurricane/tropical storm has been since formation.

Verbatim Comments continued

I use the national weather service website every day - and sometimes more than once - It is for personal use for local weather and for information on weather conditions across the country where family lives.

I use the NWS website for Hurricane information. The 3 & 5-day maps are quick and easy. River flooding isn't my thing, so this questionnaire doesn't much apply to me.

I use your services mostly for boating and fishing. I find them to be head and shoulders above the TV weather people. I live in the pocket of lower Lake Huron and I have been told it is a very hard area to predict lake weather.

I used to use weatherbug.com but it is full of spyware. Now, if could you do some thing like they do, my computer is on 24 hours a day. I liked getting the entire storm alerts from my computer. Thank you.

I was thinking that they - for local residents who access the NWS sites - for local forecasts and weather info could do the same. I mean the same graphics for the local streams and creeks it might work better.

I would like to thank the staff at NWS on behalf of my Club and myself. During Hurricane season I watch the NWS site at least 2 times per day. I would like to see: 1) a history real position vs. predicted for a depression/storm 2) a graphic which would show all the activity in the western atlantic. Thank you again.

I would suggest that the same colors should not be used for two different items/pieces of information on the same graph. Especially if there is any chance that they will cross.

I would very much like to have access to the National Basin Project. Is it finished yet?

I'm watching rainstorms / snow storms each and every day, week, month, and year. Seven days a week, watching and tracking all storms. I seriously enjoy the weather a 250% percent!!!!! The NWS is a 10-star. Once again I give the NWS a 10-star rating.

If it is possible, it may be helpful to provide information on canals, such as the ones that run through Cape Coral, Florida. Thank you.

I'm a regular person who hated graphs and charts when I had to look at them and I don't particularly care to look at them for my weather-I liked the satellite images, etc. I could access during the hurricane season.

I'm far more interested in short-term than long-term, particularly once it goes beyond a week. Current challenge is interpolation between existing gauges. Something equivalent to the digital forecast prototype for hydro would be great. It'd also be nice if the local county-run gauge system used the same benchmark as the USGS/NWS network (i.e., stream-bed data instead of MSL), but NWS probably can't control that.

I'm not too familiar with these services. I only looked at hydrologic/flood data for the first time yesterday, as family is affected in PA, however I do think I would recommend making available some larger graphical imagery. I'm a storm chaser, and I'm a accustomed to analyzing many different types and sources of WX data. The data is very useful, but seems just a bit rudimentary. How about web cams? No, I won't pay for them. But how about photos of historic levels? How about adding cost of historic floods to the data? Problematic.... yeah. Maybe some of that is already available.....I haven't dug into the data much.

Verbatim Comments continued

In storm tracking and predicting, would be nice to have link to see more than on model.

In the survey questions asking about XML, one thing that would be nice is if the XML content was delivered through FOS's...WeatherWire...NOAAPORT, etc. vs. just being downloaded off the Internet (which as we all know, is not as reliable).

Initially, I was going to suggest a form of icon that'd show increase in CFS at major dams on the Mississippi River and any large contributing streams; but 2 of your charts demonstrate those readings. It still would be pleasing to click that icon on at least a regional map to be able to get those details.

Issue watches to all FIPS and not just areas / counties leaving out cities, like you do for warnings

It is difficult to find the AHPS from the NWS web site. It took me almost an hour to find what I was looking for, river levels-prediction at Racine dam. The links menu was not very good. The information, once I found the correct site was great.

It would be especially nice to have enhanced graphics of precipitation totals for 1-day, 7-day, 30-day, and 90-day periods based on the blended radar / rain gauge products, at high spatial resolution.

It would be useful to also include population centers i.e. cities and towns on the maps. Also, an overlay of major highway and roadways on the maps would be useful.

I've been very favorably impressed with NOAA/NWS efforts over the last few years to make graphically oriented measurement and prediction products widely available over the web. While the look and feel of the graphics could often use the touch of a graphic designer, the value of these communications tools is enormous. Keep up the good work!

Just keep it plain and simple.

Keep it concise, easy to read, and applicable to the layperson. Most people viewing the National Weather Service Website are not technically savvy, nor are they meteorologists or other weather specialists. Plain and simple presentations to the client will give more viewers better understanding of the concepts you are trying to convey.

Keep it simple.

Keep it simple...much of the information is technical in nature and makes sense only to a Hydrologist.

Keep the text reports around - as demand slows the graphic services response times when in high demand. Also consider mirror sites, or load balancing to deal with outages and load issues - and if funds allow, multiple tier-1 ISP connections.

Keep up the good work! (4)

KISS, Keep It Super Simple. While some people enjoy lots of graphs and colors, most don't need that, I would think the simpler the better because most of us don't need or really want all the extra information, although it is pretty.

Verbatim Comments continued

Less time between hurricane updates.

Liked actual human voice for NOAA radio instead of artificial voice. I am red green colorblind; some graphics with too many colors are hard to see. The color red should be worst case, yellow mid, in other words use the stop light approach for easier understanding...this is in reference to the coastal flooding graphics where red was not the worst flooding areas.

Living right on the river, we would like to see the graphs be much more accurate than they are now. Who and how is the water level determined to make these graphs?

Love NOAA for hurricane alerts/information!

Make sure you cite where the hydrologic information comes from if not from the NWS. I noticed that now NWS cites data from USGS on ADHPS graphs, that's good.

Many of the technicalities included are associated with work produced by the USGS. I'm sure that a National Program can be initiated to develop an interface to produce hydrograph statistics for extreme conditions. A thoughtful interface which will be easy to understand, considering local hydrologic conditions. This will drastically improve the work performed by the NWS allowing more time for predictions, forecasts and uncertainty analysis.

Many times when I check the weather in my area, it will have hazardous weather. When I click on this, it tells me is it's going to rain. I don't consider rain showers hazardous weather.

Maps and Grids are very successful on your web page. The ease of location makes life easy. Thank You.

More frequent updates!! Some web-based observations are weeks old!!

More graphics and maps. Text is great, but if I can immediately see the flood threat area, I can process the information faster.

More health related information. For outdoor recreational use. Such as tips on how to avoid heat related health problems based on current forecast for a certain area...Texas Hill Country for example that could be easily printed and posted for public information at a state park...much like we do the weather forecast now for public info.. Keep up the good work.

More information on Winds and Wind Gusts for a particular area.

More local government input regarding the moving of a flood gauge. Moving flood gauges can have a very negative effect on local government zoning and emergency planning efforts.

Most if not all of the graphics on the last few pages were way to difficult to understand much less interpreted. I'm not even sure what usefulness these provide since rain is a difficult thing to forecast in the short term much less the long term. I don't even have the time to try and understand them so whatever you do must be much simplier.

Most of my problems with NWS forecasting have to do with the way forecasts are presented. Forecasts are presented as hard fact when they are really only predictions. I am forced to dig into discussions and look at

Verbatim Comments continued

various data in order to draw my own conclusions as to the likelihood of a particular weather event actually occurring. This manner of presentation exists for most NWS forecast products, from hydrologic to long term to today's weather forecast. I would prefer to be given likelihoods and ranges within a forecast.

Most of the graphics on this survey were blurred and difficult to observe properly.

Much of the data depicted in this survey is actually collected by the USGS however the NWS rarely works with the USGS in a joint effort to develop data displays that both agencies can use and NWS rarely identifies the data as USGS data on it's Web sites, although that has been changing recently. It seems like there are some opportunities for cooperation that are not being taken advantage of.

Must make graphs and tables more readable, printer friendly. The descriptions on the graphs are hard to read and do not translate well to the printed version.

My answers reflect the casual use of this data by a layperson, in times of local concern.

My community is on a hill. We occasionally get flash flooding, but no river flooding. I barely understand probability of excedence...I don't think the public nor most EMDs do at all and—forget it for 'warnings' going to law enforcement, FDs and their dispatchers. NWS (hydro), USGS and ACE need to be more flexible for changing landscapes/drainage characteristics. A town down hill from me is getting higher flooding and needs specific warnings (gets none). The new polarized radar should help rainfall estimates, but would be even better with a rain gage network underneath it. Work with Emergency Email Network to differentiate their 'weather' warnings (flood, Fflood, fog, tornado, Tstorm, snow, ice)—they have it all lumped together.

My sharp criticism is that much of this is quite duplicative of the services already provided for a long time by the USGS, and other local agencies, with no significant value added.

My use of the hydrologic services is for recreational purposes. I also use this service in conjunction with the river levels and the area weather forecast. I am usually interested in the current and up to a 5-day outlook/ predictions. The reason I view this information is to obtain information with regards to how safe is the river for small boating craft. What are the current conditions? Will the water levels rise or fall? A better explanation of the web based information would be nice, i.e. if it states the river is at 14ft and the flood stage is at 24ft....where is the 14ft reading being observed. Is that the average channel depth or an average reading? There is no explanation as to what that 14ft depth means with regards to hazards etc. Thanks for the opportunity to respond.

My use of the website has increased due to the large amount of data available and my perceived confidence in the information. The last few charts shown I have only just begun to use, and the snowfall data I have not yet used, but probably will this year. I consider this a premium website, and I have it on my 'favorites' list. Part of the reason is that I actually live in an area that frequently sees flash and long range flooding, based on the season and weather. Keep up the good work, and I'll get more comfortable with the other areas even if you do not change them.

Need better explanation of terms used especially for the layperson, maybe in a comprehensive glossary that is available on each web page.

Verbatim Comments continued

Need historical access to 'observed data.'

Need to update hurricane maps more than just 4 times a day especially as it approaches land

None, other than I value your research and forecast.

North Carolina is served by three River Forecast Centers. Graphics from each are significantly different making use unnecessarily awkward. Using different graphics makes conveying problems to state decision makers ineffective. Also, having to switch among these centers is awkward. Graphics should be seamless between centers. Users should not need to go to different websites. I'd be thrilled to help in the design of an effective flood warning/information system.

Not really anything. I'd like to see text forecasts as much as graphical forecasts. Text is easier to understand for some people. So don't get away from using text forecasts as well. However, graphical forecasts are very useful.

Nothing to add. Thank you.

NWS does an outstanding job in providing the information in a timely manner, its 80-90% correct, but remember during an incident requiring a field response in rural America it would be awesome to have it converted to voice and sent out over the weather radio. Most of rural emergency types do not have and probably won't ever see in the near future (due to cost and lack of infrastructure) wireless Internet for the laptops, which most of them don't even have. We all have and regularly use weather radio. When an alert goes out over commercial radio/TV/teletype etc. the weather radio is monitored continually. This also gives the public advanced warning and information helping me with notification issues. All the pretty graphics in the world wont ever replace point and click with a number showing up. No multi-graph multi color graphics when we have 3 minutes to make a decision on evacuation vs. stay and play.... just a thought, I am old school, do not carry a palm pilot, have a 1997 laptop with no wireless (even if

NWS doing a good job.

NWS hydrologic services have improved greatly over the last few years and look forward to continued improvement.

On NOAA Weather Radio, it's best to say certain words rather than giving the computer an abbreviation. For example, during Ivan, the forecast said 940 mb rather than 940 millibars. The Weather Radio also goes on and on and on about the same stuff and it is rarely updated. Giving a list of counties under a flood watch, which won't be for another 24 hours, every time the forecast circles around is annoying when giving a huge list. Same with river flooding, just say it's flooding and give them someplace else to get specific data.

On some graphs my computer only showed the 9 column.

On some of the maps, color differentiation might be a problem. Specifically, one of the flood maps had adjoining areas that were magenta and red. Someone with color vision impairment probably couldn't see the difference.

On the AHPS web pages...The main map is OK, but I would really like to be able to zoom in to see more detail on all available points of a particular basin... and maybe see an indication of the location of any flood

Verbatim Comments continued

crest...track it as it makes it way downstream. Also...the links on the left side are not what I want. I want to keep the same links I am used to seeing on the web pages of my local Forecast Office. Getting back to the local forecast office pages from the AHPS/river pages is a pain in the neck.

On the current Hydrographs, the legend is confusing. There are 6 named water levels, but only 5 colors. Also two of the colors are the same on the graph and one color on the graph is not in the legend.

One comment is that I would like to see more concentrated data feeds that contain full national data especially with forecasts. It makes it difficult to concatenate all national weather for trend searches and historical inquiries if information has to be downloaded from several files that reside in several directories. Positive comment: having the warnings in XML on a national level is a big help, and cycle files make current statistics very easy to get and it is a system that I have coded to for maximum data and minimal bandwidth.

One good suggestion would be for the WSR radar precipitation estimates would be to have a java type application where you can scroll over a map and get precise estimates over specific locations. This would also be good for the snow water depth map, since color scale is so closely similar that it can be very difficult to see exactly what the actual value is. Currently you use a pink, purplish color for the snow depth (water depth) estimate, and maybe a traditional WSR DBZ scale might be a better fit for that since it will allow a clearer view of amounts. One last would be to have archives of past WSR radar estimates. Another good idea would be to have a java program similar to the one I mentioned above to have ASOS (AWOS) and USGS rainfall gauge stations with actual rainfall totals overlaid on the radar and or precipitation total maps. This would allow users to see how close the radar is estimating to the actual amount and for quality purposes.

Only problem I'm having is the website layout and the high-density pages taking forever to load onto my computer. Most of the nation is not on DSL — we're still on telephone modems, with older computers. Don't program to the highest income, fastest Internet access. And please make it easier to locate recent weather information. Example: I located past data for my hometown that went right up to midnight the day before — haven't been able to locate it again, and can't find it for West Yellowstone (or Bozeman, or any other nearby location). I want to know if it really did get down to 10 degrees and an inch of snow the night we left for lower elevation. Several years ago I could find anything I needed on the website, now it's more complicated and takes so long to see the page that it is very frustrating when it's turns out to be another dead end. I programmed web pages beginning in 1993, so I know it is not necessary to make the page files so large. That's just bad programming. I also notice that similar grap

Outreach and public awareness of hydrological products needs to be improved. There were a few items that the hydrological services provide, that I did not know about, and I am associated with the National Weather Service.

Over the last few days I have been using the web site frequently looking at the Ohio River. I have not found it easy to view different areas of the river. For instance, I don't think it is easy to look at the Pittsburgh area and then back to Louisville, or sections of the river in-between.

Verbatim Comments continued

Overall a very impressive and informative service. Some of the graphics are clearly for 'weather geeks'. The maps are generally very useful. Thanks for all the work - and the chance to participate in the survey.

Please be sure to provide data products in accepted open standard formats. For GIS products, shape files, XML-related formats (e.g., GML), ASCII would be good choices.

Please continue text only products too. Even through I have high speed internet; sometimes graphics will not load when there are a lot of people trying to load the page at the same time.

Please keep it simple, concise, and easy for the 'average' person to understand!

Please keep up the good work. I have a question. Is there any way that you can more clearly give the difference between a warning and a watch? Some of the TV meteorologists fuzz this over. There is a big difference between the two. A couple of the graphics are very impressive. The click on the regional areas is great.

Please keep/make your data available on the net, in raw form for such as NIDS, surface/upper air OBS, RCM, for use in software such as Digital Atmosphere Workstation. More consistent use of 1-hour precipitation values in meter OBS.

Please remember to include a legend and label the numbers (10 — inches). Great wealth of info here that can be used in the classroom - but teachers need to be able to download into basic programs such as Excel (or other spreadsheet program).

Post Time of next update on Charts.

Products for the general public should differ from those for other agencies familiar with statistics and terms used in forecasts. Maybe a 'general' forecast product could be developed that would not confuse the layperson.

Provide a legend that explains what 'time' is used when river levels are read.

Provide better scaling of graphical presentations.

Provide Java animations of your forecast map: http://www.hpc.ncep.noaa.gov/noaa/noaa.gif

River flood watches and warnings could be represented as colored lines along the river course, similar to hurricane/tropical storm warnings and watches. For example, red could represent flash flood warnings for specific streams and rivers. Pink or Yellow could be for 'watch' levels. This would provide an at-a-glance view of flash flood potential for a whole watershed. More graphic than gauging station points.

See earlier comments about real time data needs in GIS formats.

See previous comments.

Shorter print out.

Simple graphs and terminology.

Verbatim Comments continued

Simple, concise information is best for the non-technical user. Perhaps there should be two parts to the NWS webpage: technical data for the engineering community that needs and appreciates this level of detail, and gross information for community emergencies. Thanks.

Site too technical.

Soap Based Web Services /Realtime GIS data.

Some charts and graphs are not as easy to use for our members. Easy to read and follow charts are needed for the average person (or at least clear, concise explanations).

Some charts or graphs show a number of greens that are sometimes difficult to distinguish. Otherwise thanks for your great work.

Some of the questions did not relate to our everyday needs in the southeastern part of North Carolina. I'm not sure you got informed answers to all your questions.

Some time the definitions of the colors on a map are not clear.

Specifically interested in conditions in my own county. It would be helpful to be able to access data by county/state name.

Terms such as 100-year flood and 70% chance of something typically are not well understood by the public, usually because the NWS personnel do not understand the concepts. Simple graphs with 3 or 4 colors from green meaning good to read meaning bad should should be the norm. Background should be consistent in some depiction of the US and NOT black! Strongly contrasting colors are to be avoided at all costs. Providing products in a GIS based schema is critical to the continued use of NWS products.

Thank you for giving us the information that you give.

Thank you for providing this valuable service! The Red Cross appreciates having access to the information.

Thank you for the wonderful service you provide.

Thank you very much for a site that is way ahead of its time. I am 65 years old. And can't wait to get up in the morning to see what some one has come up with while I sleep. I am in FL, and all the information I found online was of great help in the last 8 weeks. Thank you all again.

Thanks for all your hard work. It is appreciated. Have a great day!

Thanks for allowing us to participate in the survey. Please share the results with us.

Thanks for asking.

Thanks for listening to our needs, you do a great job and we look forward to these improvements in the future.

Thanks for your efforts to improve the expression and delivery of your data. I eventually foresee a real-time (with some delay) 3D graphic of probable stream flows in select reaches across the US.

Verbatim Comments continued

Thanks!

The colors in the keys for the weather maps are so close that it is hard to tell the difference on the actual map.

The current improvements to the site are so far great; keep up the good work!

The graphics on your survey webpage need to be more in focus...they looked blurry while I was answering the survey.

The map graphics are more understandable at a glance. When you do not have time to translate the other graphics…

The most important thing for the NWS is to understand the public and who will be reading the forecasts and warnings. As a meteorology student, I am learning to understand and interpret the graphical and text-based analyses, but as part of the general population without my education, there are some graphs that I would not understand, and that could be frustrating for say, a farmer, that has had no education in meteorology but wants to know if his farm is going to flood and he's going to lose his crops.

The NWS needs to have more printer friendly graphic pages (in general) (i.e.: white background instead of black) for easier reading & printing.

The overall service is good and concise and understandable even to a common lay person. Some of the maps require a little studying to understand them, but overall user friendly.

The service hydrologist one of the only summaries of weather events associated with water conditions in Mississippi. I find the information very useful to set the water conditions in the context of the weather of the past month.

The text for the immediate weather 'Warnings' and 'Hazardous Weather Outlooks' can be better displayed in Outline form delineated by state and then by county. Indentations using 'bullet' form can be easier to quickly decipher the data.

The Tucson NWS has been very helpful with our operations at the Tucson USGS surface water field office. On your opening page with the imagery plots, I would like to see a brief description (in layman's terms), of what we are looking at on the images, and how they apply to rainfall and intensity (base reflectivity and infrared, water vapor is self explanatory).

There's a sufficiency of data and analyses. Different organization of web pages for easier and more direct navigation to desired information would be helpful to me. I tend to use site maps a lot because I'm used to indexes and feel comfortable with them

They need to be more easily reached from the home pages.

Things should be basic for quickly understanding a problem.

Think about how the common man will use your website. If the ideas and explanation of what the chart means are not simple and clear, and immediately available, then it becomes clutter. Try to design web

Verbatim Comments continued

pages and graphs that define their terms or explain what they mean in layman's terms.   The explanation of the above charts are the first such explanations I have ever received, even though they are on the River watch and AHPS service currently provided.   Where is the education to use this information????

This product line is a great step for public safety. More information will reach more people, and be understood by more of those people, due to this use of the World Wide Web. Lives will be saved any time more information is available and used by the public. This is a wonderful use of our tax dollars, and I support it 100%.

This sight helped very much my husband was in Florida and I am in Colorado. I was able to tell what was going on with Ivan. I was there for Jeanne.

This site needs to be written in plain English or a key provided for the coded references. http:// www.wrh.noaa.gov/cgi-bin/Sacramento/afd?SFOAFDSTO

Took me a while to figure out what everything meant and still am not sure what I'm looking at in some cases. But what I understand what I see if suits me to a T. I use it to check up on things where I live and to check up on things where my kids and grandkids live. Strictly Private use.

Two things that might be helpful: First, color code the seriousness. Green=OK, Red is bad. Also make sure that the colors chosen don't blend together too much - maroon and red are sometimes hard to tell apart. When choosing the forecast area, I can use the zip code, but it doesn't say that on the page. It lists city, street. On the daily weather hazards (which I use most of the hazard warnings) - instead of listing everything in the text, break out the non-changing info in a table (list the counties with bullets, for example) I love the fact that I get prompt service and no ads!

*Update hurricane information more often than once every 6 hours when a hurricane is about to hit the US or is currently over the US, *please*.*

Use local time from radar source vs. Greenwich; military is fine. Several times this past summer severe thunderstorms were either upon us or closing in & there was no warning from NWS. Radar loops were @ 45 minutes or older. I ended up using weatherbug.com for most recent radar info. I live in Lorain, Ohio & Lake Erie makes for interesting weather. However, at 3AM, I want to know direction & severity, quickly. That way I know if I have to close windows & go back to bed or wake family to go into basement. Overall the NWS Cleveland home page is my favorite weather source. Weatherbug is my backup. I also use northern Indiana NWS radar a lot. No ghost images over the Cleveland area that way. Keep up the good work.

Use local time in the graphs, instead of, or in addition to UTC or GMT.

Use the information for fishing. Also is of interest in real estate.

Watch that 100-year probability stuff — unless one did occur within the past century.

We are very satisfied overall with the services.

Verbatim Comments continued

We have two residential properties in the flood plain. The AHPS charts were excellent for our purposes during the aftermath of Hurricane Ivan. My only problem has been book marking the pages from computer to computer. The actual charts are very hard to find when you try to navigate through the general NOAA portal. The information is just great — we were able to get out of our summer cottage with hours to spare because of the detail ... But the right page is damn hard to find ... We invited our friends and neighbors to log on and they had trouble locating the right URL, too.

We often refer sport anglers to the Alaska Pacific River Forecast Center site in order to help answer their river level questions. Many of the terms on the site are too technical for this audience.

Web products are very slow via internet, especially in afternoon. Work for another federal agency and need info ASAP. Want to be able to 'zoom in' on national and regional maps. Please differentiate between QPF and non-QPF river/stage forecasts. I have been involved with real time water control for about 20 years, and forecasts have improved, keep up the good work! Area forecast discussions from local and WFO's are very beneficial. Thanks for the opportunity for comment.

When only two or three colors are needed on a graph, you should move away from the primary colors to something a little more subtle. The pinkish-purple color is especially annoying. Text information about river gauge location would be nice. Perhaps a direct link to the USGS station (gauge) homepage where history, water quality, and other statistics are available. My use is completely recreational (kayaking) in the western Pennsylvania area. Once I leave the house, I cannot check the gauge until I'm back home. I would love to see a telephone based service, even if it was a 900 number.

*When showing the regional page, such as: http://www.srh.noaa.gov/cgi-bin/ahps.cgi?tbw it *is* handy to have the tabular data such as: http://www.srh.noaa.gov/ahps/maps/ahps_text.php?site=tbw Please keep it. The graphic format is great for a quick*

When the going gets though-big storm- the Newport weather radio is silent, which is not very reassuring to the listeners. Could they not have a broadcast from their station from some other weather station as a remote, so we could remain informed?

Whoever sold you our e-mail address ripped you off in a big way. Our publication is about fictional characters like ghosts, vampires, and werewolves. We have absolutely no responsibilities whatsoever with respect to your floods — we live on a hillside, hundreds of feet above the nearest river.

Why did this survey not cover any of the tropical cyclone graphics?

Winds and temperature.

With the exception of drought condition assessment, and perhaps snow-pack/melt assessment, I believe a greater share of the resources should be allocated for nearer term forecasting. Higher predictability, and for most users other than scientists, greater application for their uses, is gained by this focus.

Would be nice if you could set up cookies on web page so my most frequently accessed pages (local loops of radar, satellite, severe storm forecast) could have hot buttons. There is a lot of good information there, but it requires a lot of user navigation each time your URL is accessed. Cell phones are starting to have

Verbatim Comments continued

text messaging and pseudo-web access. It would be nice to be able to access your data via cell phone, perhaps using zip code or area code to zoom to local area conditions.

Would like an easier way or form to view rain totals and snow totals on a different web page.

Would like personal access to local data base information by county and state.

Would like to see the return of the original, large sized national map. It displayed a better depiction of weather conditions. That is it gave a better idea of what the weather was doing in a given area.

You are doing a great job, I can definitely count on your forecasts.

You folks do good work. Thanks!

You folks provide a wealth of useful info. I like to see the fruits of my tax dollars put to good use. Thanks for all your hard work.

You guys are doing a great job!

You guys do an awesome job for us!! Thanks for making it all available to us over the internet!

You have one of the best government web sites! Keep up the excellent work.

Precipitation

*1) On the snow pack plots. The distortion in the Continental US shape is very distracting. Since snow tends to come from the north, you should try to include Canadian data - that would give a ** much ** more accurate representation of snow pack. 2) Terms like 'hundred year' flood can be very misleading - we seem to have a lot of those (far more than once per hundred years). Use statistical terms - they are more accurate. 3) In a computer simulation, actual numbers are relatively unimportant - it's the bounds that count. Use them. In general, I do appreciate the data and the improving accuracy of the data - it is frequently useful (both hydrometeorological prediction and data monitoring).*

Antecedent precipitation information, with timing and ranges.

Be careful with radar-estimated rainfalls. Is there some sort of gauge/rainfall estimate comparison? The use of GIS is becoming more increasing in the Metr field, incorporate it. When talking about 100/500 year flood planes, let the public know of changes. Many flood zones have changed over the past few years due to river changes, flood prevention programs, etc. Some residents/businesses may need flood insurance and not know it. GIS incorporation is an easy representation via DEM/shapefile use.

For the snow pack water equivalent map - it would also be very useful to have a map showing the relationship to 'normal' snow pack. Knowing that the snow pack SWE is 12 inches is not as useful as knowing that it is 35% of normal for that time of year.

I am very disappointed with NWS-Hydrometeorological Design Studies Branch with completing the Rainfall Frequency Atlas update for the Hawaiian Islands. The U.S. Army Corps of Engineers has provided this

Verbatim Comments continued

branch with annual funding to complete/update atlases throughout the US. Several design branch chiefs over the past few years have promised completing the update for the State of Hawaii. The University of Hawaii has provided additional digitized data to improve coverage, funded by other agencies. Now the study will not be completed due to lack of funding from the Corps. NWS needs to complete this study as promised.

I have had difficulty accessing precipitation data from the time it is included in recent reports (about 0-30 days) to when it appears in climate databases after 1-2 years. I would like the NWS to provide web based access to provisional precipitation and other climate data for this interum period.

I have not used the flooding information as much as I use normal forecast information and radar information. I am just now learning to use some of the other tools available, so my input may not be clear, but the NWS is making great strides to help us in the Emergency Management Field and we appreciate it.

I hope you have the sections on Alaska. We rely on the NWS to tell us what is coming and that allows us to schedule our crews for big storms. We have had three 100-year floods in one year two years ago and the NWS called me on the warnings.

I plan according to the precipitation forecasts even though my sense is that they seldom come to fruition.

I primarily use your services to review precipitation amounts. I especially like maps such as this one: http://nws.met.psu.edu/hydro/precip/current/allpa.gif. They provide both graphics and contour intervals with numbers. I find this method much easier to interpret than similar maps without the numbers on the map. For my purposes and interests, what I usually don't find are maps that cross NWS Office boundaries. While the map I linked above usually does include more than one local forecast region, data from western PA is usually not on it.

It would be interesting to see past climate data in a graphical format. Rainfall totals tend to vary greatly over small distances but the monthly totals are just at the airport (Cincinnati). General the service is great and I would hate to see too many changes; if it's not broke don't fix it.

It would be nice to have access to precipitation rates and rainfall reports every hour, similar to the observation round-up product (which hasn't updated in months).

It's very difficult to find rain gauge information on website. For instance, when I drill into the central Illinois forecast I want rain info (past, present and future) available.

Like to get rainfall totals per cities/towns. The radar rainfall totals are not even close. I've stopped looking at radar for amounts.

Living in the mountains of northern California, I count on, and read daily, your weather site for any watches and warnings of coming storms and heavy snow fall or other types of warnings, such as wind, etc. Being retired now, I also read the Fire Weather Forecast on line, guess it's still a force of habit? But weather has always been interesting and a need to know when I was still working! Thanks.

Map of snow depth.

Verbatim Comments continued

Marquette (MI) NWS web site had some great information on snow water equivalent this past winter, but I found out about it only through indirect personal contacts. There was not an obvious link from the web site menu. The information was very useful (I was watching a particular watershed), and should be made easy for the general public to see.

More complete online documentation of hydrologic products such as rainfall analyses.

My son is in high school in Colorado, I use the information on your site a lot with him for his school activities and when he's getting ready for school. Very educational all the time and I've noticed getting better. Thanks.

Precipitation and flood information should also include whether the event was a 10, 25, 50, or 100-year storm. Local storm water drainage systems could be better evaluated with that information.

Precipitation data not available for many locations. Need to have a more comprehensive and accessible network of precipitation measurement locations.

Rainfall measurement at MCO is chronically below what seems to fall in surrounding areas. Either take the rain gauge outside or move it to KORL.

Really looking for access to precipitation data quickly rather than waiting for Climatological reports to arrive. Many municipalities that we serve want to know right away, is this a 100-year storm? Ivan has increased those requests tenfold.

The amount of potential rain and how that will probable affect flooding in our area is critical to emergency planning, however in the area that I am involved in the information is not needed.

The NWS Doppler rainfall estimates are notoriously less than what IFLOWS gauges indicate; hopefully someone is looking into this problem.

This response pertains to long-range (1 - 6 months out) precipitation forecasts. I'd like to be able to click on a map to get, for a given location, a plot showing two curves on the same set of axes: (1) Excedence probability versus precipitation amount for the current forecast, and (2) Exceedance probability versus precipitation amount based on the historic precipitation record. In other words, the plot would show 2 curves, each shaped like a backward elongated letter 'S'. I think the above suggestion would be more useful than the current map of the U.S. showing shifts in probabilities of the upper, middle and lower terciles.

Total rainfall amounts within 50 miles of my location. They can have an effect on water supply and downstream flooding. It is also good for travel, because they can indicate the potential for landslide or flash flooding in an area that someone is traveling to/from. How about mudslide warnings? Is there a way to calibrate soil moisture and precipitation to calculate the potential for landslide? And, wouldn't this need to take into account real-time rainfall amounts?

Would like to see a more accurate prediction on local snowfall and rain levels and temps, where I am flooding generally isn't a severe problem, but do feel you guys and gals are doing the best you can and getting better all the time, keep up the good work.

Verbatim Comments continued

You provide a great service and have for years. I have seen many improvements including your snow pack estimates over the last year. I use you point station reports extensively to monitor water and snow conditions and do water planning at our family ranch Utah while I work in California.

Product Requests

1) Flash Flood Warnings were not issued until flooding started on 12/16/02 because storm clouds were under radar beam. Better Doppler radar coverage is needed in the northern San Francisco Bay Area Counties of Napa, Sonoma and Marin. A radar site at Santa Airport may be a good location. 2) Better radio transmission/ reception is needed for NOAA Weather radios. 3) A map showing 'flood severity categories' would be helpful. 4) A web page with rainfall intensity grids similar to Storm Watch would be helpful to the public.

Add more monitoring stations to streams.

An additional river gauge that would service our township, it has two major tributaries and the only readings for flood levels are from Karthaus (approx 24 miles upstream) and Sinnemahoning (approx 13 miles). There is a painted gauge on the Keating Road bridge but it is not useful at flood level it is not accessible by township residents when the water is up.

Automate the Polebridge station...thanks for asking.

Automated gauge stations provide current/accurate information, which helps emergency management and response personnel monitor conditions and make well-informed decisions. Additional sites could be helpful in local assessments of situations.

Better calibration gauges. Use past river levels at particular locations to gauge what river levels will do down stream. River level in Columbia SC on the Congaree can easily be used to forecast Sandy Run river levels. During hurricane Francis, the numbers forecast for Sandy Run were horrible.

Create an email database that automatically alerts subscribers when a given channel reaches a certain stage.

Data from NYS Great Lakes basin is missing from displays.

Excellent service and presentation. Additional data collection stations!!!! (Especially for the Fishkill Creek and surrounding area in Dutchess County New York).

Have more water level gauges on some rivers. I cannot find the level at Berrien Springs????

Historical data doesn't mean much to me because it could be off too much for future planning. I'd rather be informed (even alerted) of predictable occurrences based on real data. How about having each county EMA Director fill out a list of things, i.e.: when the Ohio River will reach flood stage within that county or a snow level exceeding 6' within that county, and alert that office when that prediction is obtained similar to what you do for major wind storms. Make available information that we can get when we need it (as you do so well), but also make us aware by pager, phone call (but not email) in advance, of information that we need to

Verbatim Comments continued

know. If we know in advance then we can plan and warn potential citizens that may not otherwise know of the risks.

I live on the Susquehanna (York County Side) between Safeharbor and Holtwood dams. There are no reporting stations in my area, with Marietta being the closest. It would be nice to have a reporting station between the Safeharbor and Holtwood dams.

I supervise a potable water treatment plant located along the Monongahela River. My greatest concern is river elevation during flooding. The river flows north passed our facility. The nearest gauge to our south is located on the southern section of the river before Gray's Landing L&D. The nearest gauge to our north is located on the northern section of the river after Maxwell L&D. There are no gauges/forecasts for our pool. It is difficult if not impossible for me to predict what the river will do during flood conditions while trying to use data from these two sites.

I understand the reason that the gauge is located at the Hwy 19 south (Culloden) bridge; however, it provides little information for our use of upstream possible flooding situations. As money comes available for additional gauges, a real-time gauge would best gauge would best benefit us located either at the Hwy 36 or 109 Bridge in Upson County, GA.

I would like radar or infrared oceanic conditions available on the home menu. I like the archive menus.

I would like to see a lot more stream reporting locations.

I would like to see more river gauges included in my area, 16701. USGS has quit handling the information and given all gauges to USACE. (Army Corps of Engineers). I like to view the historical data as well as projections provided by AHPS. USACE only provides the last 5 or 6 hours of data. USACE dropped publishing data for many of the stream gauges that USGS used to supply. This is very disappointing as in my area; one stream may vary greatly compared to a stream just over the ridge. I find the AHPS projections very useful for planning my river voyages or lake camping. I consult AHPS daily. Thanks for your efforts to improve the service. P.S. the map for my area has several gauges double listed, it takes up needed room on the zoom screen that could be used for additional gauges.

I would very much like to have an automated river gauge in the city of Franklin, VA. A devastating flood occurred here in September of 1999. A gauge several miles upstream did not help us in knowing that the river would over spill its banks.

Improved signal strength of weather radio at mouth of Patuxent River.

In Maine, we need more real time reporting stations for rain, river and groundwater. During our drought conditions in 2002 we used the real time groundwater monitoring station weekly. Unfortunately many of those stations are located so far from public water. We found the information difficult to interpret for our water systems. The NOAA staffs in both Gray and Caribou were great help both in helping to conduct awareness seminars for water systems and answering questions as needed.

In my case, they could increase the rain gauge certification. In El Paso, the only place rainfall actually 'counts' is at the airport, and that doesn't always accurately reflect the rain in the city or the county for that matter.

Verbatim Comments continued

Install a National Weather Service Doppler Radar in Southeast New Mexico, in Chaves or Eddy County!

Install more monitoring stations on secondary rivers.

*Just my previous *rant* on the loss of the Alpha Pager Alert system.*

More frequent updates, more gauges.

More points along the river needed for river stage and crest information. We get stuck with the same areas every time. We need more; we have people living all over the river flood area. Also more information on what areas will flood. Seems boiler plate right now. The river flood statements have great information I would just like to see more flood forecast stage areas. The Tennessee River is very large and to only have flood warnings for Whitesburg and McFarland Park in Florence, AL is leaving out other information along the river channel.

More rain gauges and more rain gauges.

More reliable stream gauges...having just experienced Ivan, it was extremely frustrating to have an important stream gauge inoperative until after the Swatar creek dropped below flood stage. Good team at State College...I depend on them immensely.

Most of Teton County is unable to receive NWS Radio due to mountains surrounding the County and 'shielding' the input from Pocatello, Idaho. NWS, Vernon Preston, is working with/for the County looking for ways to correct this problem. Until this is corrected most of Teton County is unable to meet the Storm Ready certification criteria!

Need a gauge in Grayville, Illinois on the Wabash and Bonpas river junction.

Need to ensure that all gauges are automated and in a working order. This past weekend's Hannibal predictions left us guessing what we were actually going to get and in discussions with NWS, found it was due to the needed repairs on the gauges. This kept us guessing and did not help in such a severe flooding emergency. We handle certain dangerous cargoes and also the manufacture of said commodities so we depend daily on the NWS information. Lock and Dam closures to navigation would be a greatly appreciated added feature to the data provided by NWS data and would lessen the amounts of calls that must be made directly to the locks when emergencies already exist. NWS has always been a great partner to my company and we should probably not only work with Pittsburgh but also with Charleston since we ship south, we must also know all this data for those areas as well as the Pittsburgh District.

Possibly more hydro stations on rivers used by fisherman so that we have a greater range from put ins to put ins. For example on the Sac River below Stockton Reservoir there is only one station at Caplinger Mills before the Sac hits the Osage River mouth could you give us another station between those points.

Put a flood gauge on the Catawba Rive near Old Fort. As a matter of fact, contact me, if you need access or physical facilities.

River gauge readings are extremely important to us. To increase reliability of this data, the gages must be adequately serviced, maintained and continuously available. I think that more resources should be devoted

Verbatim Comments continued

to the service and maintenance of the gauges. I realize that this is something that has to be worked out with the USGS.

See request for automated notification & selection of criteria in an earlier box. Selectable precipitation amounts/types, river levels at various locations with means to send the automated notification to a pager/ cell phone (text message) would be of great assistance & use for emergency managers. Along with an independent means to notify our phones/pagers of warnings though your system.

The last question was the most important to me and the information we provide to our customers ... if you can link your products to the Flood Insurance Rate Maps and 100-year BFE!

The NWS desperately needs to place a radar system in the San Luis Valley of Colorado. We are now in a 'blind hole' in this area with no reliable radar coverage, which severely impacts the accuracy and timeliness of warnings. The NWS also needs to better utilize non-USGS river gauging stations in its flood forecasts. The State of Colorado operates more gauging stations in Colorado than the USGS does, however, I do not believe that the NWS utilizes all, or even a majority, of the Colorado stations.

The only thing I see is the need for more gauges on certain rivers in my area and the use of existing gauges of the USGS that are already in place on the rivers and creeks in my area, The Jackson, KY weather office does an exceptional job in forecasting and notifiying all areas in there operation area.

The quantity of rain gauges is not sufficient enough to address the needs of homeowners. Many times the amount of rain/snow received within a few miles is significantly different and this cannot be assessed with a single rain gauge in an entire county. The hydrologic information (such as rain fall) should be available for a larger range of time options. Currently the data is offered in ranges of hours up to 24, but not longer and is difficult to locate on the website, In fact you must leave the NOAA website to get to it. It should be a link from the local forecast.

The rain gauges need better maintenance.

There are no NWS monitored stream gauges in the Cickahominy River watershed. Therefore we were caught somewhat unprepared when the extreme rainfall of TD Gaston (30 August 2004) caused some significant flooding in New Kent County, VA. We need a means of of warning so that we can properly inform the public. Generally the NWS—esp. Wakefield, VA office—does a great job.

Routine River Forecasts

1. Speed of current in MPH. 2. Severity of debris: Extreme, Caution, Normal 3. Lock closures

Additional data/information is needed on the Seneca River/NYS Canal System.

Excellent site! I use it to both get weather information and learn more about weather and the processes that generate it. I would like to have more educational information about how the 'river stage' measurements process is set up and conducted.

Groupings' of streams/rivers that is upstream from a given point that would have a direct impact on flooding in that area, e.g.: If I click on Allegheny River at Freeport (lock 5) I would be given the opportunity to click

Verbatim Comments continued

on a link that would let me know of conditions upriver of that point that could affect flooding (weather, dams that are letting water out). Also, more timely updating of the actual conditions at data points would be appreciated, as well as 'guesstimates' as to the increases in water levels...e.g.: 4 inches an hour, 2 inches an hour, etc. We have property located directly on the water that takes us about an hour to get to...I use your web site to make educated guesses as to whether or not we should head up to pull our boat out of the water, move our RV or just ride the weather out. We got burned (RV flooded...boat okay) during Frances because the 'official' crest prediction was about three feet lower than reality, plus we had no way of knowing how fast the water was rising.

I am a whitewater paddler, and have always used the river gauge phone line for getting water levels. The information on the web site is so much more useful because the graphs show what the river is doing, rising, falling, what rate, etc. These are great tools for recreational paddlers and I am sure the professional boaters rely heavily on the information available to them as well. Thanks for a great job.

I am distressed that in the streamlining of warning products, there is no longer a distinction between river flood warnings and flood warnings due to heavy rain when you are past the flash flooding part of the event. As a television station, in a major city with large rivers, we have made the decision not to program our automated warning system to run flood warnings due to the longevity of river flood warnings. That means that flood warnings for flooding not associated with rising rivers are not immediately broadcast. Flash flood warnings, being short fused in nature, are still aired immediately.

I am with the Corps of Engineers Water Management Section. Our primary interest in NWS forecasts is for river forecasting and reservoir inflow forecasting, as it relates to regulation of Federal reservoirs, mainly in Kansas and Missouri. Long-term river forecasts (greater than 2 weeks) don't have a lot of use in this region, where runoff is largely influenced by rainfall. They are more useful for snowmelt floods and seasonal runoff from snow pack, and as such they have some use for our offices in the upper Midwest and mountain West where a large portion of the reservoir inflows are related to snow pack. Even short term and medium term river forecasts would be improved with a confidence interval or some probabilistic analysis. Flood forecasts from storms over basin runoff areas with lower densities of gauging networks would be expected to have wider confidence limits. But most importantly I would like to see the MBRFC work on their runoff and river modeling. I am afraid now that the confidence limits

I believe that river flow and river stage forecasts that are displayed on the same chart with a linear, directly proportional progression are misleading. This is a small point and I (we) have only praise for the terrific efforts of those responsible. A flow/stage graph would be useful if accurate.

I don't know exactly why, but most of the people I work with don't know about your site. Given the mess with all the hurricanes this year, a lot of folks were trying to log onto the NHC site and just clogging it up. I could always access your site and come up with the graphs, charts, GOES images, and everything else I needed to track the storm paths. I actually became NWS Downtown and took to just posting the charts. Everybody in the office (some 300+) must have stopped by my cube at some point every day. I don't know how you publicize yourself better (I keyed in to you when working for NASA), unless you get yourself linked up to Google and Yahoo news groups or something.

Verbatim Comments continued

I have used a level that could be described as ALERT. This is meant to allow me to get staff into position if required. This is set below flood stage, but gives us time to get ready.

I live on Shelter Creek off of Hwy. 53. I watch the river level any time we have excessive rainfall. We experienced the '100-year' flood in this area and are always nervous when the creek rises.

I live on the Cedar River, between Cedar Rapids and Conesvile. I would like more info as it pertains to my area. I am just upriver from Douhtery bridge.

I only use the data for the Nushagak and Kvichak rivers in Alaska. I think the measuring point for the Nushagak has gotten moved at least twice this summer and it makes it very difficult to plan barge trips up the river when the data is not consistent. Also a link to prior months data or even prior years data would be helpful in planning.

I think some one should develop the riverbug.com, just like the weatherbug.com, only it will have live river level updates, instead of the 1 hour delay.

I use stream flow data to look at local flooding and to check flows for whitewater kayaking. Appreciate and use the product on a regular basis. Re: the survey. Fairly long. A progress monitor would have helped my patience.

I use the NWS web site primarily to better understand weather generally, not for important daily decisions. I enjoy your site and find it useful for my purposes. The flood data is not particularly useful to me in southeast Alaska. I get immediate weather forecast information from weather radio and commercial radio and from personal cloud/barometer observation.

I use the river forecast to determine water level for boating on the Yukon River during hunting season, I would like to be able to compare current water levels to past year's water levels on the same dates, to determine, where I can go & not go in the river compared to past years, & also try to determine if the water is below or above average for the time of year compared to other years, Also would like to know long range predictions of a couple weeks out, & what the river has been doing the past month, rising, falling staying steady.

I use water level forecast for determining if I can run a charter on the Columbia River. It would be helpful if the predictions were at least 2 weeks ahead instead of 5 days. This would allow me to either book, set departure and arrival times, or even cancel a charter in a more timely manner.

I work on a towboat in the Louisville, KY area.... the forecasts are always done well.... I'm interested in the conditions at the up stream gauge points, real time and forecast. I love the stream flow forecast.... the graphs are harder for me to read, although, I can figure it out... over all, one great job done.

I would like to see coverage of the Stanislaus and Mokelumne Rivers in California since I live between the two rivers. Weather reports are critical for my area since severe weather disrupts electrical power, communications and transportation due to heavy rains, severe wind and heavy snowfall. Hydrological reports inform me of river flows for personal safety and recreational activities. Such information informs me of predicted lake levels affecting water supplies for my area.

Verbatim Comments continued

I would like to see information for the Manistique river in the Upper Peninsula of Michigan. At this time I cannot find this river on the list.

I'm mostly interested in my new backyard: the Kill Von Beaste, which is a branch of the Hackensack River in Valley Cottage, NY. Any information about that river is personally very interesting to me.

In reference to the 100-year flood, and 500-year flood etc. I believe these terms become extremely confusing to the general public. It seems the references tend to be looked as if the 100 years (or 500) are from a specific beginning and ending time, rather than the overall percentage of if it could happen. 100 years from when? Rather than a flood like this would likely happen in a 100 year time period... I think the flood aspect of the service is proving to be very valuable, however unlike severe weather it tends to be ignored by the general public.

It may be that I'm just not experienced enough with your great service, but I don't seem to be able to access our local rivers. I live in St. Lawrence County, on the Oswegatchie River. The St. Lawrence and Grasse Rivers are other nearby rivers and I could just get as far up as Buffalo, which is really Western NY. Thanks for a great Service!

It would be hugely helpful to have a concise, direct & obvious link to warnings on every regional page (i.e., the radar page and the satellite page especially) would maybe turn red when warnings exist. The way this website is used where I work, we zoom into areas where claim calls are starting to come in and follow warnings in that area so that adjusters can be notified and state-specific insurance information researched prior to an onslaught of inbound calls. Right now, we have to navigate back to the Watches/Warnings page to get this information in most cases and then into each individual area. Having a link that would take us directly from the radar or satellite regional zoom to the warnings for that area would be very helpful. Personally, I use this site for my horse breeding business, for obvious reasons. We are located in the Oklahoma City area and every second of severe weather information we can obtain can be critical. Speeding up the access to the warnings would be helpful to me on a personal l

Model runs for the river forecast discharges would be more useful if they were run more than once a day. Thanks.

More information on streams for kayakers, canoeists, and rafters would be good; especially correlating river levels with difficulty ratings on more Alaskan rivers.

More river gauging information would be useful, as well as more frequent (routine?) hydrologic products describing the current conditions and expected river levels. Prefer graphical products to get an overall 'big picture' of conditions, but text products are also handy to an extent.

More short term and immediate information on river conditions, and expectations. A normal river level indication on all graphics.

Much of the information appears to be based on riverine conditions in relatively wet climates, and does not appear to have much application in the arid regions of the Southwest where the luxury of being able to predict river levels is nearly non-existent on the local level.

Verbatim Comments continued

NWS needs to make better use of local resources (instrumentation & local agency personnel) to provide forecasts for local rivers/streams. Also, some better correlation between automated systems and 'ground truth' needs to be developed, to avoid issuance of watches/warnings based solely upon automated systems.

Predication based modeling on the Oregon Coast range and adjacent river flows seems to be a good guess. I am sure that weather forecasting becomes easier the farther east across America one goes. As an avid outdoors person (sometime river guide) I need the best information available. I normally read your weather reports and make my own river level projections. I truly appreciate the information that NWS provides. Thank you.

Probabilistic and certainty intervals in forecasts would greatly enhance the credibility of your reports. Error rates on short-term (24hr) river level forecasts from western river center are abysmal. Focusing on making the forecast accuracy better, and providing the sources of uncertainty would really help...One question I am often asked is why or how the river level forecasts are so bad even in the summer where there is no precipitation to impact them.????

Quicker Updates on website. Better Graphics - without increasing load time, increased detail on local maps

Retrievable history of daily mean river levels up to 360 days at any given point.

River levels are not kept up to date/time - can be up to 4 hours before the website is updated. This makes it extremely difficult to keep up to speed about what is really going on with the water levels.

Some of the smaller streams in my area can have a huge impact on our residents. As a journalist, it would very helpful if the NWS were to expand the number of streams it issues forecasts for, as opposed to simple stage observations.

Stop using the word 'datum'. The average person doesn't know what that means.

Thank you for providing river flow data. I use the information for recreational canoeing.

The color levels, similar to decibel levels on radar, need more explanation; especially on the water content on snow coverage page and stage level on regional flood page, are the trout active?

The NWS is able to decode satellite-monitoring data sent by State of Colorado stream gauges. I am concerned that about differences in the real time stream flow data shown on the NWS sites and the State of Colorado stream flow web site. I believe this is due to the NWS not using the most current stage-discharge relation for the gauge and/or the most current measurement shift to the rating at the gauge. This same problem seems to be evident between NWS reported data and real-time data reported on the USGS real time streamflow web site. There needs to be some coordinated effort by the NWS to use the most current rating and shift if NWS wishes to present accurate streamflow data to the public.

The NWS web site is great. I like being able to access flood forecasts. I live on the Ochlockonee river. It is often generalized in the news about forecasts for our region. Having a place to see for myself what the

Verbatim Comments continued

river will do is very comforting. I know that NWS has lots of information to disseminate; however I go about 6 months out of the year between visits. Like now I visit because of the hurricane season. After hurricane season it may be 6 months before I return. In that time my links change and I have to go find the pages I want all over again. I need a way to navigate your site without having to know all the weather terminology.

There should be a station on the French Broad River at or near its' headwaters in Rosman, NC.

Updates on river levels and forecasts that are timed to arrive before the times of the local newscasts are appreciated. For instance...if the local news is at 10 PM. It helps to get new information out about 9:30 PM, so we can add it to our graphics package. Information that is sent at 10:30 PM won't make it on the air. Obviously, in a breaking weather situation, bulletins can come at any time...but regular updates get maximum dissemination when they arrive a little before news time.

We need more river information accessible through our local NWS. Right now we access the information through the USGS and it is a very time consuming cumbersome process. So I'll love to know if and when these graphics will become available.

We receive the product ATLRVFCAE daily at about 11:00 AM. We use this information to plan our hydro generation and spilling when necessary. We run our generation forecasts twice a day, at 7:00 AM and 2:00 PM. The daily rivers forecast works with the 2:00 PM generation forecast schedule wise. Would be better if we had it in time for the 7:00 AM forecast.

What I use most are real-time or near real-time river and stream level information. More reporting points and better maintenance of the exiting points are what are most important to me. Also, having good access to historical and trend data for each location.

Would like to see flood and river forecasts for the South Anna River, York Basin in Virginia.

You need to make river forecast predictions for more locations in the eastern region.

You should ignore these survey responses from me — I misunderstood — I thought your survey was about the service and information I receive from using the www.weather.gov web site. My survey comments here refer strictly to my personal use of that site, which only rarely involves river-based concerns. I have two suggestions regarding that site. First, I expect more immediately local information to be available. I'm in the middle of Pennsylvania but 'my' forecast information is shown as coming from New Jersey. Second, the images NOAA provided of last year's hurricane activity were FAR more impressive, visually appealing, and useful than the rigidly restricted and visually unappealing images NOAA has provided this year.

Specific Information Requests

Are there any long-term plans for implementing a digital weather radio format? This could provide a higher level of detail and graphics in the same bandwidth. Otherwise, my weather radio is excellent for traveling and for the alert function.

Describe how land owners living between gage points along the Ohio River, (and/or other water) can use this information to gauge the rise and fall of water levels at their particular location. For example, I have noticed

Verbatim Comments continued

river level upstream and down stream change much more dramatically then they do at my particular location. I live on the Ohio River, upstream from Meldahl Dam (close) and downstream from Maysville (far). The reading from Maysville changes rapidly but the level at my location stays more consistent. It seems this is because of my close location of the Dam where the river level is controlled. Please advise where I can find additional information on this phenomenon.

FFMP should be implemented everywhere... and you should ask questions about that... you should ask people on the survey for suggestions for how better to display info or how better to categorize it... for their uses...and also ask them where else they get information.

Forecast packages, radar graphics and warnings are less accurate in mountainous regions (my example: the northern Sierra Nevada Mountains.). More data collection needs to be in place, with radar that is not 'blinded' by terrain, more spotters. Localized orographic effects are pronounced and not necessarily reflected in forecasts. I have offered to spot/report and received no response other than a form reply 'You will be contacted'.

Give us the names of the contact person(s) at the NWS. Easy to reach.

I and several other families live on the Patsalagia Creek (river?). I need to know when it will come over the banks. By the time the Conecuh River has crested, we're already underwater. There was once a website which had the Patsalagia on it, but after the last flood, it disappeared for some reason. Can't you just list the information about the Patsalagia too, since it affects us well before the Conecuh River? We desperately need these alerts.

I would like more hydrology links on your web pages. Why can I not get my local WFO information on the left hand column? I get some crazy national junky links.

Is it possible to visit the NWS facility at Peachtree City Airport and talk with the forecasters there?

It is sometimes difficult as a consumer (I.E. Non-professional user) to make the transition from a major storm event (Hurricane being the notable case in point) to a hydrological event, since that information is tracked separately. Some easy links (rather than the notation 'can be found under header apnbt11348' or such) would be ideal to bridge to the pertinent information.

It would be helpful to me to be able to check flood levels in the New River in Jefferson / West Jefferson North Carolina area.

It would be very helpful if you could discuss specifics of flood levels on the Potomac and Rappahannock below your current levels. We also have no good flood maps for this area depicting 100-year flood plane and 500-year flood plain.

Longer loops on the various radar formats would enhance my use of the NOAA system. A selection for time would be very educational for me and I am sure many others who look at the satellite and radar images to determine the coming weather as opposed to what supposed to happen. It is very gratifying to discern the correct forecast against the professionals.

Verbatim Comments continued

Please view my earlier comments. Aside from letting more people know about the great websites you provide, I have only a few suggestions. A listing of river gauge phone numbers for a watershed or region would be nice. Second, I think limited use of probability numbers would be beneficial as well. But again, I love these sites and they are very key to my day to day routine. Thanks for all the hard work.

Provide better river and stream maps on web pages.

Some of the stations do not have much historical info available, and the user is referred to the USGS site for that info. For the site that I am most interested in (Harpers Ferry, WV), the link does not work at all, and even when I have managed to figure out how to get the information out of USGS, there are frequent holes in the data due to instrument failures.

Specific information is far more valuable than probabilities. 'Do you, or do you not evacuate is the question?', not 'what is the probability?' Specific river levels mean something to the person than does 'moderate' or 'minor' flood. A variable (ex. crest at 19-20') is acceptable in early stages as it gives time to make some general decisions, but the sooner a definite level can be decided, the better. Thirty-five years experience has told me that NWS predictions are only as good as the equipment in the field that gives forecasters information. This network must be maintained. Sometimes it is, and sometimes it isn't all working.

The graphic you use is just fine! I wish that this new site had the historical information that the old site had. It was great to go back and see how many times the river reached a certain level. This site isn't as easy for me to get around. I will work on it, however. Thank you for caring what the user thinks.

The NWS needs to adopt uniform mapping and graphical standards across all products. For example, different color schemes were used to represent flood categories on several products, and identical color schemes were used to represent different types of categories (red and blue are used to both represent flood categories and probability categories). Color scales for precipitation and snow water equivalent are in different colors, gradations and units (millimeters vs. inches). Different map projections and different map keys also vary across products. Displays of regional precipitation products and flood status maps vary across different river forecast centers. Products displaying forecast uncertainty for the general public need to be less technical. Flood warnings and watches need to be more geographically specific in all communication media (text, graphics, etc.). Products need to be in a GIS context for users to combine with information of interest to them. The flood inundation maps presented in the survey

The Pittsburgh NOAA website needs to be more informative like the State College website. I feel that more pictures need to be displayed showing weather related events that occurred around the area.

There is a need to have consistent information. Today, I don't have 'permission' to see the graphs of the Ohio river levels around Louisville while I can get the graphs for other areas.

This is probably out of your control, but I have an issue with how current river level measurements are taken. Recently after the flooding associated with the remnants of Ivan, I was looking for river information on the Allegheny River in the West Hickory area. The forecast information was there but the current level wasn't listed and I couldn't find any past measurements within a week or so. I was looking for a

Verbatim Comments continued

measurement to use for comparison since where I spend time on the Allegheny isn't in the same location as the official measurement at West Hickory, so a level of 7 ft there doesn't mean as much unless I know how to translate it to the depth of the river in my location. Of course, now that I type this, I see that the current measurement is now being displayed for West Hickory. Maybe there was a sensor problem.

Wave heights in Lake Michigan.

What I like: that I can use Pacific satellite loop to figure out when I can go out btw. Storms as they sweep across N. Olympic Pen. Where I live. What I don't like: That when I wanted high water events on Rock Creek, WDC, it wasn't there, although' low

Would like to see better tide forecasting, with more tide stations. Would like the tide information tied in with local flood & river information for a combined effect. Would like to see links to TX DOT weather stations on bridges and Harris County, TX flood gauges. Would like to see the NOAA navigation charts updated on a more frequent bases with hydrological surveys done at least every 10 years in heavily used areas like Galveston, TX

Survey Specific

A very comprehensive survey.

By the 10,000th page, I gave up.

Don't make the questionnaires so long.

First some comments on the survey and specific graphics: I will reiterate that limiting choices to one option in the first questions gives you incomplete information. I downgraded the Mississippi River at Dubuque graphics for 'Understanding' because: 1) There is no key that defines the data line colors - blue as documented and green as forecast. You and I know what it is, but it should be defined. 2) Timing of updates is not listed (daily? hourly? increments in-between?) 3) Gauge datum information is cryptic and not tied to stage - is 584.95 feet ASL zero feet on the stage gauge? And is that information important enough to be placed right under the title, instead of as a footnote? For the national precipitation / snow pack analysis information I had to say 'No' - that I don't use it. Technically, that information is irrelevant to me in Alaska. However, I do use the equivalent Alaska data. I am an Alaska Department of Fish and Game, Sport Fish Division, Area Management Biologist. My area of responsibility,

I had good intentions when starting this survey, but found it taking too long. Not sure now whether you gave us an idea in the beginning about the number of questions or time required. Thanks, but got to go to work!

Please find another term other than 'AHPS' - It means nothing and says nothing about what it is to outside government people. This survey is too long and was not filled out completely due to time restraints.

Please make the surveys shorter. Better to do multiple shorter surveys than to overwhelm the participant.

Should give an idea of how long survey will take to complete before inviting comment. The new format for the western Oregon river level data on the Web loads very slowly, even with broadband and is not organized as usefully for me as the prior format.

Verbatim Comments continued

Some of the questions were over my head, no pun intended. Thank you great site.

Survey a little long!

Survey is too long and redundant could not finish all.

Survey is too long.

Survey too long. I lost interest toward the end It has been shown that people cannot divide ratings as fine at 10 levels. If you provide 10 divisions people only use 3 in their response. The problem is that different people will use a different set set of 3. A three level or at most 5 level survey would have been more useful.

Survey took a little too long, I bailed out early.

Survey was too long, I quit.

Survey was too long.

Survey was way too long!!!!!!!!!

Survey way too long! Bet lots of people quit survey.

Thanks for all the information. You have saved much property by your efforts. The survey was too long, but good.

Thanks for the opportunity to comment. This survey was very well designed.

Thanks for the opportunity to participate. I am a retired media journalist and professional communicator now living in a rural area where commercial services such as broadcast radio and TV simply don't provide information in a timely, objective or experienced way. We must rely on NOAA and public service band radio for such information as you review in this survey. And, when traveling in our motor home, the same is true too often in other remote areas. There, NOAA radio becomes more important since it is generally easy to find. But NOAA radio too often is behind times in fast developing situations and too general in description of places for the traveler.

This survey took long so I simply stopped answering questions.

This survey was way too long and I'm not sure I would have taken it if I had know, next time shorten it up some and you will get more surveyors filling out the whole sheet.

This survey was way too long for a casual user. I use the weather.gov web site and am very happy with it. I usually use the hurricane warnings, river flood stages and radar. They are displayed very nicely.

Too long of a survey.

USGS data updates more rapidly...I use it more than your site. This survey took too much of my time.

Your survey is a little long —was getting tired at the last.

Verbatim Comments continued

Your survey is way too long.

Your survey took too long! It should be cut in about half!

Water Supply/Reservoir Information

Allow separate information for rivers on the one hand, and lakes on the other hand. And, provide lake level information for the major population centers on the lake rather than at small areas where a river empties into or out of a lake.

As I explained earlier in the survey, the information on certain geographical points on the Rio Grande River is incomplete, e.g., water releases from Amistad and Falcon dams; river flow at Laredo in CFS terms is not available; hourly levels at Falcon Dam are not available as at Amistad.

Faster updates of river levels. Hours old reading does not help us.

Forecasted and/or actual pool levels for lakes would be helpful for many inland states (i.e. Tennessee where TVA operates a number of reservoirs on the Tennessee River). Lakes used for flood control are frequently raised and lowered, and this information would be helpful to many boaters on inland waters.

I use your information for recreational fishing. The information I receive from your charts is sufficient to tell me whether or not the river is fishable - i.e. water level, flow rate, etc. Thanks for providing this information.

I would like to know the lake levels in different reservoirs. Boat launches can become high & dry. Flood capacities /hold-ability for control of down stream flows. Riffe lake reservoir on the Cowlitz river, intake flow out flow and then the out flow from Mossyrock dam. This could all be given in a one liner.

More information needs to be given to smaller lakes, rivers and streams. The population along small bodies of water is increasing yearly. One example would be the Black River in Eastern North Carolina. Also tidal data up stream where water fluctuations may be 2 feet or more.

The information on the International Boundary and Water Commission website is also useful. Their interpretation of water storage capacity, precipitation at a specific water reservoir, and flow rates are very useful.

Warn areas downriver of snow-pack and river heights above them.

We are just discovering how critical the NWS hydrologic services are to watershed management efforts. So far the NWS has been a very good partner in efforts to identify and fill data gaps and develop customized decision support systems for shared management.

Would better serve us if more stream info was available locally, not just major rivers, especially in our very densely populated area where flash flooding is a major threat.

Would like to see the radar reports forecasts updated at a shorter period during possible storm situations.

Verbatim Comments continued

Below are the open-ended responses received for the Spanish version of the questionnaire.

I believe your data bank is essential in the planning process. However, I have the impression that your agency is not involved in the territorial structuring process. The graphic features of the information and its incorporation to the GIS has to be set up in order to have a bigger presence among developers, teachers and public officers.

I think saying that a flood could be large or limited is to create a wrong idea. I think all of them should be treated with the same caution.

In my case, I broadcast your weather reports through radio and television. Limiting the advisories to the affected areas doesn't allow me to get the information on time. Likewise, people that get to the affected area will not know either.

In Nicaragua, the graphics information about tropical systems helps us predict the possibilities of rain in the dry areas of the Pacific coast territory. Please, indicate in your predictions the movement of these systems. Identify them by the territory who is going to receive the rains.

Internet-GIS.. It´s an easy to use format oriented to the classrooms. It could be used as a basic image for the aerial photographs.

Por favor, proporcione cualquier comentario adicional con referencia a los servicios hidrlógicos actuales de NWS y/o sugerencias sobre como NWS puede servir mejor sus necesidades de información hidrológica.

Questionnaire

Questionnaire – English

NWS Hydrologic Services Program Survey

Note: All questions are optional and each page will have the following footer, "Questions or problems with the survey? Email NWSsurvey@mail.cfigroup.com"

The National Weather Service (NWS) issues hazardous weather and flood watches, warnings, and advisories for the protection of life and property. It is also charged with providing information to enhance the national economy. The NWS Hydrologic Services Program focuses on providing forecasts, watches and warnings for river and flash flooding.

This survey is part of an ongoing effort to assess the overall satisfaction of NWS users and to garner feedback necessary to improve services. This survey focuses specifically on the NWS Hydrologic Services Program.

Your answers are voluntary, but your opinions are very important to us. Your responses will be held completely confidential, and you will never be identified by name. CFI Group, a third party research and consulting firm, is administering this survey via a secure server. This interview will take about 15 minutes, and is authorized by Office of Management and Budget Control No. 1505-0191.

Please click on the "Next" button below to begin the survey. You may click the "Back" button at any time to view a prior page.

I. Demographic Questions

The following questions are intended to help us better understand your responses by allowing us to classify responses by geographic area and by type of users. As with the entire survey, your responses are completely voluntary and confidential.

1) What is your postal zip code?

2) What is your primary use of hydrologic information provided by the NWS or what commercial sector do you represent? (please select only one)

   a. Emergency management
   b. "Traditional" media (radio, TV, print)
   c. Internet/Web
   d. Water supply/hydropower
   e. Agriculture
   f. Shipping (e.g., barge)
   g. Natural resource management
   h. Consulting/add value/provide custom hydrologic services
   i. Education
   j. Recreation
   k. Personal use
   l. Other (please specify)

3) What is the primary scope of your responsibility? (select one)

   a. National
   b. Regional (all or parts of multiple states)
   c. Single state
   d. All or parts of multiple counties
   e. Single county
   f. Large city/urban area (population greater than 100,000)
   g. Smaller city/township (population less than 100,000)
   h. Personal
   i. Other (please specify)

Questionnaire – English continued

II. Current Hydrology Products

1) Which of the following types of hydrologic information do you obtain from the NWS? (select all that apply)
   a. Flood information (watches, warnings and statements)
   b. Water supply/reservoir information
   c. Drought information
   d. Routine river forecasts/information
   e. Recreation information
   f. Precipitation information (rain, snow)
   g. Other information (please specify)

If 4=a:
5) Think about the **flood information** provided by the NWS (i.e., warnings, watches, outlooks and statements), on a 10 point scale, where 1 means poor and 10 means excellent, please rate the quality of flood information on the following:
   a. Clarity
   b. Conciseness
   c. Timeliness
   d. Accuracy
   e. Organization of information
   f. Meets my needs

If 4=b
6) Think about the **water supply/reservoir information** provided by the NWS, on a 10 point scale, where 1 means poor and 10 means excellent, please rate the quality of the water supply/reservoir information on the following:
   a. Clarity
   b. Conciseness
   c. Timeliness
   d. Accuracy
   e. Organization of information
   f. Meets my needs

If 4=c
7) Think about the **drought information** provided by the NWS, on a 10 point scale, where 1 means poor and 10 means excellent, please rate the quality of the drought information on the following:
   a. Clarity
   b. Conciseness
   c. Timeliness
   d. Accuracy
   e. Organization of information
   f. Meets my needs

If 4=d
8) Think about the **routine river forecasts/information** provided by the NWS, on a 10 point scale, where 1 means poor and 10 means excellent, please rate the quality of the river forecasts/information on the following:
   a. Clarity
   b. Conciseness
   c. Timeliness
   d. Accuracy
   e. Organization of information
   f. Meets my needs

Questionnaire – English continued

If 4=e
9) Think about the **recreation information** provided by the NWS, on a 10 point scale, where 1 means poor and 10 means excellent, please rate the quality of the recreation information on the following:

a. Clarity
b. Conciseness
c. Timeliness
d. Accuracy
e. Organization of information
f. Meets my needs

If 4=f
10) Think about the **precipitation (rain, snow) information** provided by the NWS, on a 10 point scale, where 1 means poor and 10 means excellent, please rate the quality of the recreation information on the following:

a. Clarity
b. Conciseness
c. Timeliness
d. Accuracy
e. Organization of information
f. Meets my needs

Questionnaire – English continued

III. Customer Satisfaction Index

Now, please think about your overall satisfaction with the NWS Hydrologic Services Program.

11) First, please consider all of your experiences with the NWS Hydrologic Services Program. Using a 10 point scale on which 1 means very dissatisfied and 10 means very satisfied, how satisfied are you with the NWS Hydrologic Services Program?

12) Considering all of the expectations that we have discussed, to what extent has the NWS Hydrologic Services Program fallen short of**,** or exceeded your expectations? Using a 10 point scale on which 1 now means falls short of your expectations and 10 means exceeds your expectations, to what extent has the NWS Hydrologic Services Program fallen short of**,** or exceeded your expectations?

13) Forget the NWS Hydrologic Services Program for a moment. Now, imagine an ideal hydrologic services program. How well do you think the NWS Hydrologic Services Program compares with that ideal hydrologic services program you just imagined? Please use a 10 point scale on which 1 means not very close to the ideal, and 10 means very close to the ideal.

Questionnaire – English continued

IV. Desired Outcomes

14) Have you ever formally contacted the National Weather Service to report a problem or make a suggestion with regard to its hydrologic products and services?

a. Yes
b. No **(skip to Q16)**

15) On a 10 point scale where 1 means poor and 10 means excellent, please rate the responsiveness of the NWS personnel to your problem or suggestion.

16) Using a 10 point scale where 1 means not at all likely and 10 means very likely, how likely would you be to take action based on the hydrologic information you receive from the National Weather Service?

Using a 10 point scale, on which 1 means not at all confident and 10 means very confident, how confident are you that the NWS Hydrologic Services Program will do a good job of providing forecasts, watches and warnings in the future?

Questionnaire – English continued

V. Current Products Continued

18) By what means do you receive text-based NWS hydrology products (e.g. flood warnings)? (Select all that apply)

a. NWS Web pages
b. Non-NWS Web pages
c. Phone
d. NOAA Weather Radio
e. NOAA Weather Wire
f. Family of Services (FOS)
g. Emergency Managers Weather Information Network (EMWIN)
h. Local or cable TV
i. Commercial Radio
j. Private Vendor
k. Other (please specify)

The NWS is increasingly providing information in different formats. The following questions ask about how we can most effectively provide information in various categories.

19) Please rate the following formats of receiving **flash flood/flood warnings and watches** from the NWS, using a 10 point scale, where 1 is not very close to the ideal and 10 is very close to the ideal.

a. Text
b. Graphics
c. A combination of text and graphics
d. NOAA Weather Radio

20) Please rate the following formats of receiving **river forecasts** from the NWS, using a 10 point scale, where 1 is not very close to the ideal and 10 is very close to the ideal.

a. Text
b. Graphics
c. A combination of text and graphics
d. NOAA Weather Radio

21) Please rate the following formats of receiving **river/stream observations** from the NWS, using a 10 point scale, where 1 is not very close to the ideal and 10 is very close to the ideal.

a. Text
b. Graphics
c. A combination of text and graphics
d. NOAA Weather Radio

Questionnaire – English continued

VI. Flood Risk

The NWS characterizes flood severity to more effectively communicate the impact of flooding. It uses the following categories:

Minor Flooding - minimal or no property damage, but possibly some public threat or inconvenience.
Moderate Flooding - some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations are necessary.
Major Flooding - extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations.

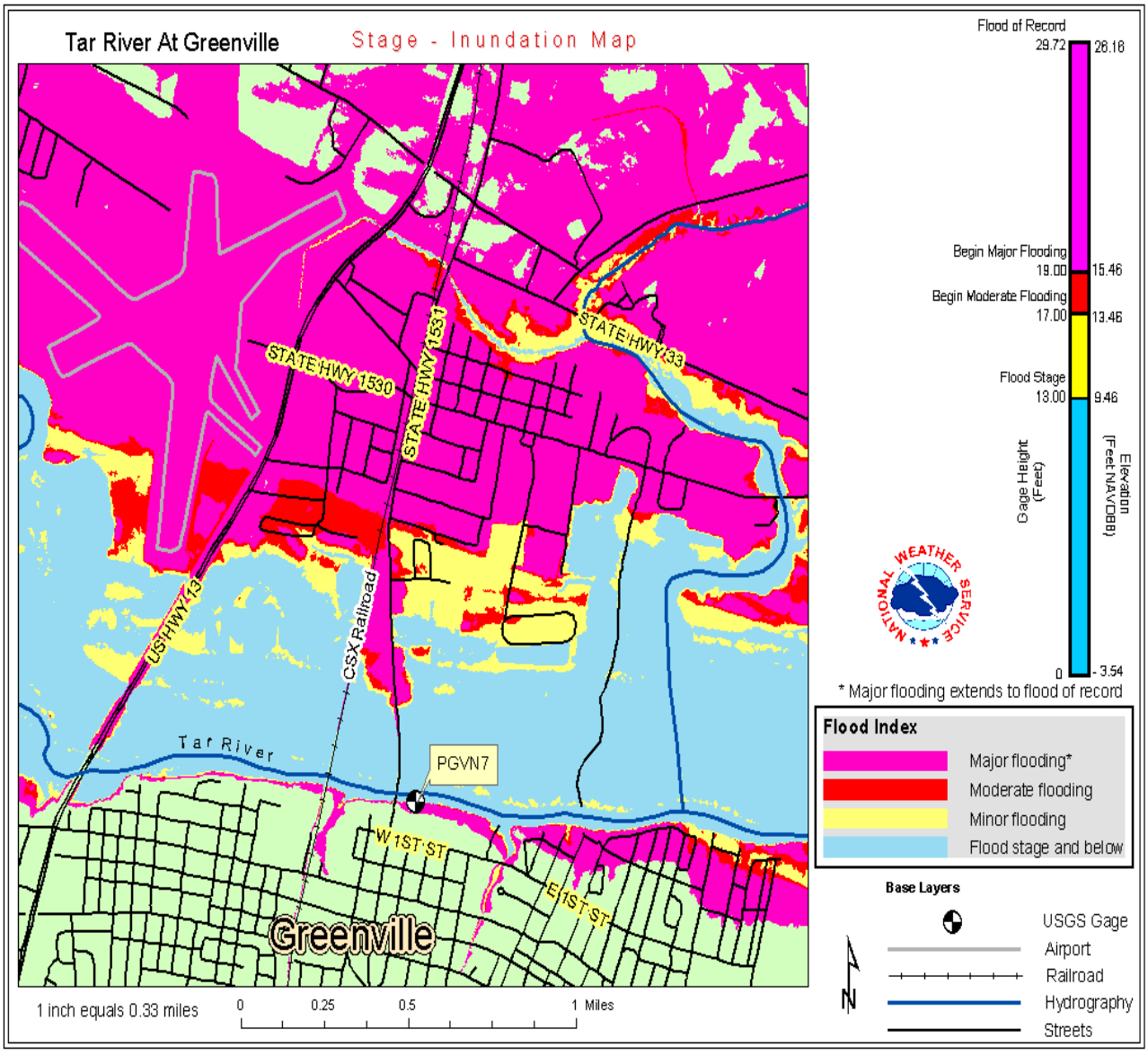
22) Are you familiar with the way these terms are used by the NWS in their flood warnings?
   a. Yes
   b. No

23) Using a 10 point scale where 1 means not at all useful and 10 means very useful, please rate the usefulness of these flood severity categories in interpreting the impact of river flooding.

24) If 5 or less to Q23, What could the NWS do to make these flood severity categories more useful? (open end)

Questionnaire – English continued

Recently, the NWS has combined the flood severity categories with terrain elevation information to portray the area impacted by each flood category in map form. An example is shown below.



25) Using a 10 point scale where 1 means poor and 10 means excellent, please rate the graphical flood severity map on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about flood severity

Questionnaire – English continued

VII. Additional Access Modes

The NWS is considering providing information using additional access modes and formats, focused primarily on making automated data processing more efficient.

26) Do you now use or do you plan to use automated processing of hydrologic information?
   a. Yes
   b. No (skip to Q30)

27) Please rate the following modes, using a 10 point scale, where 1 is not very close to the ideal and 10 is very close to the ideal.
   a. Using a graphical Web-based interface (e.g., menu) to select information for download
   b. Query a data base (i.e., direct access to specific information)
   c. Wholesale downloading of information (i.e., ftp)

28) Please rate the following data formats, using a 10 point scale, where 1 is not very close to ideal and 10 is very close to ideal.
   a. XML
   b. In a GIS compatible format

29) Please list any additional access modes and formats not already mentioned that you would like the NWS to consider to make automated data processing more efficient. (open end)

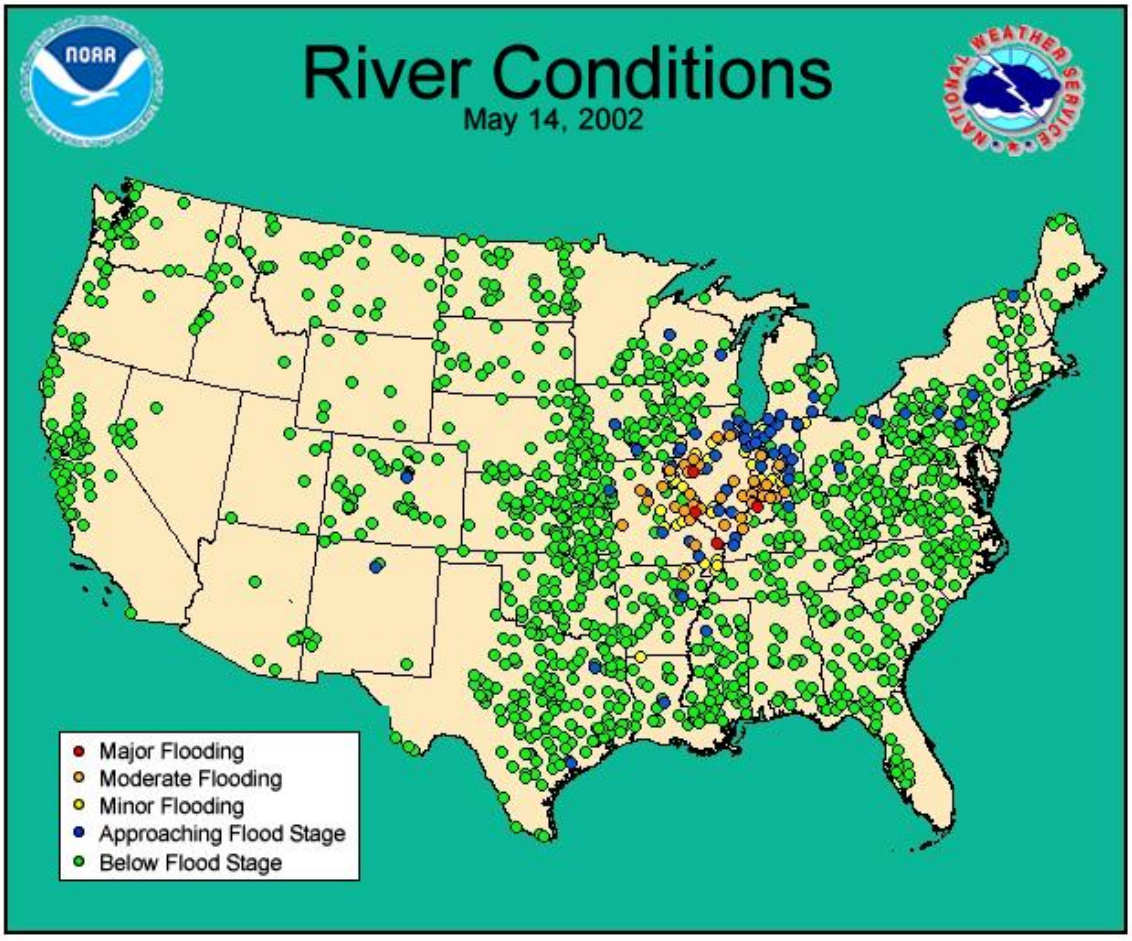
Questionnaire – English continued

VIII. Graphics

The National Weather Service has web sites that enable users to zoom in from a national map, to a regional level, to a point location along a river where detailed hydrologic information can be obtained. In order to provide our customers with the most useful graphics online, please answer the following questions. The next several questions, are based upon the graphics that either can be viewed from these web sites, or we are considering for future deployment.

30) The graphic below provides an overview of river conditions across the continental United States. Using a 10 point scale where 1 means poor and 10 means excellent, please rate the river conditions map on the following:

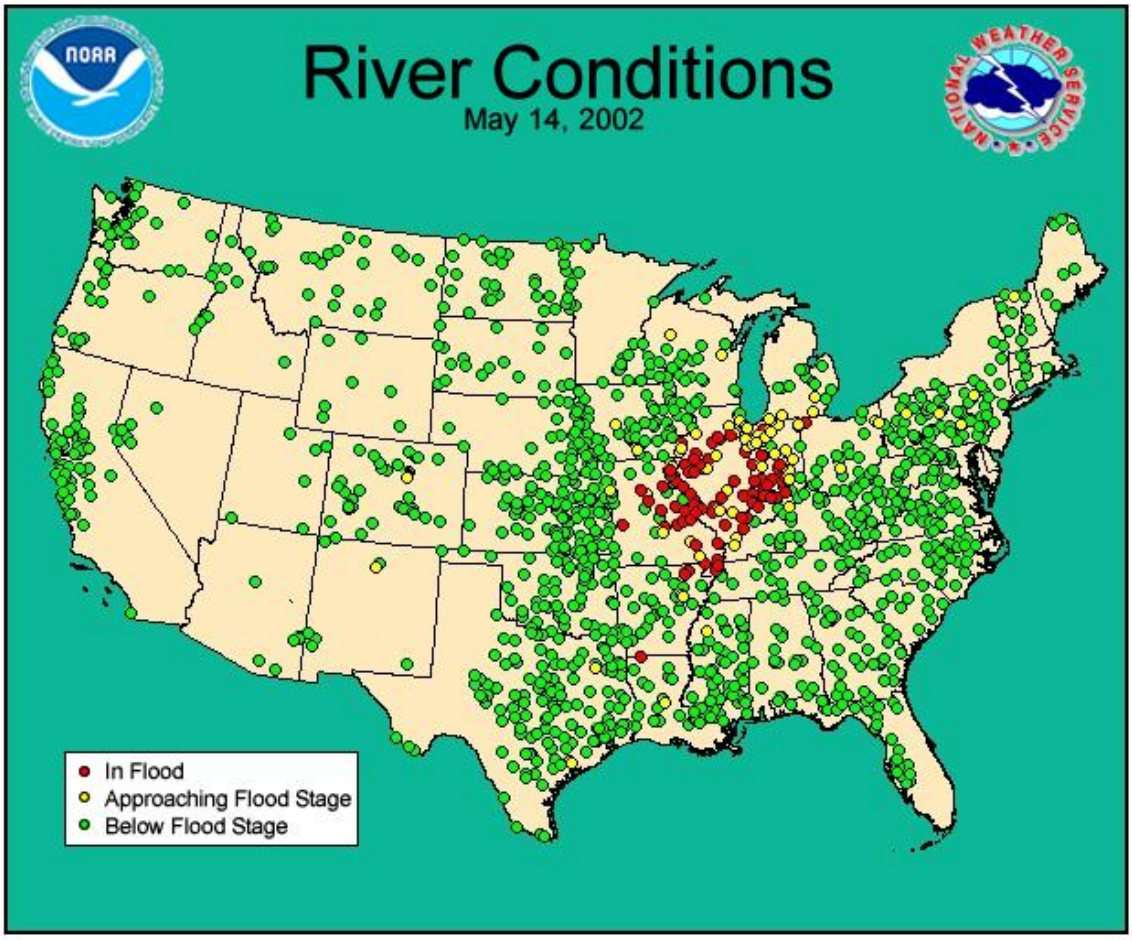
a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about river conditions at a national level



31) Below is the same map, depicting river conditions in a slightly different way. Using the same 10 point scale where 1 means poor and 10 means excellent, now please rate the river conditions map on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about river conditions at a national level

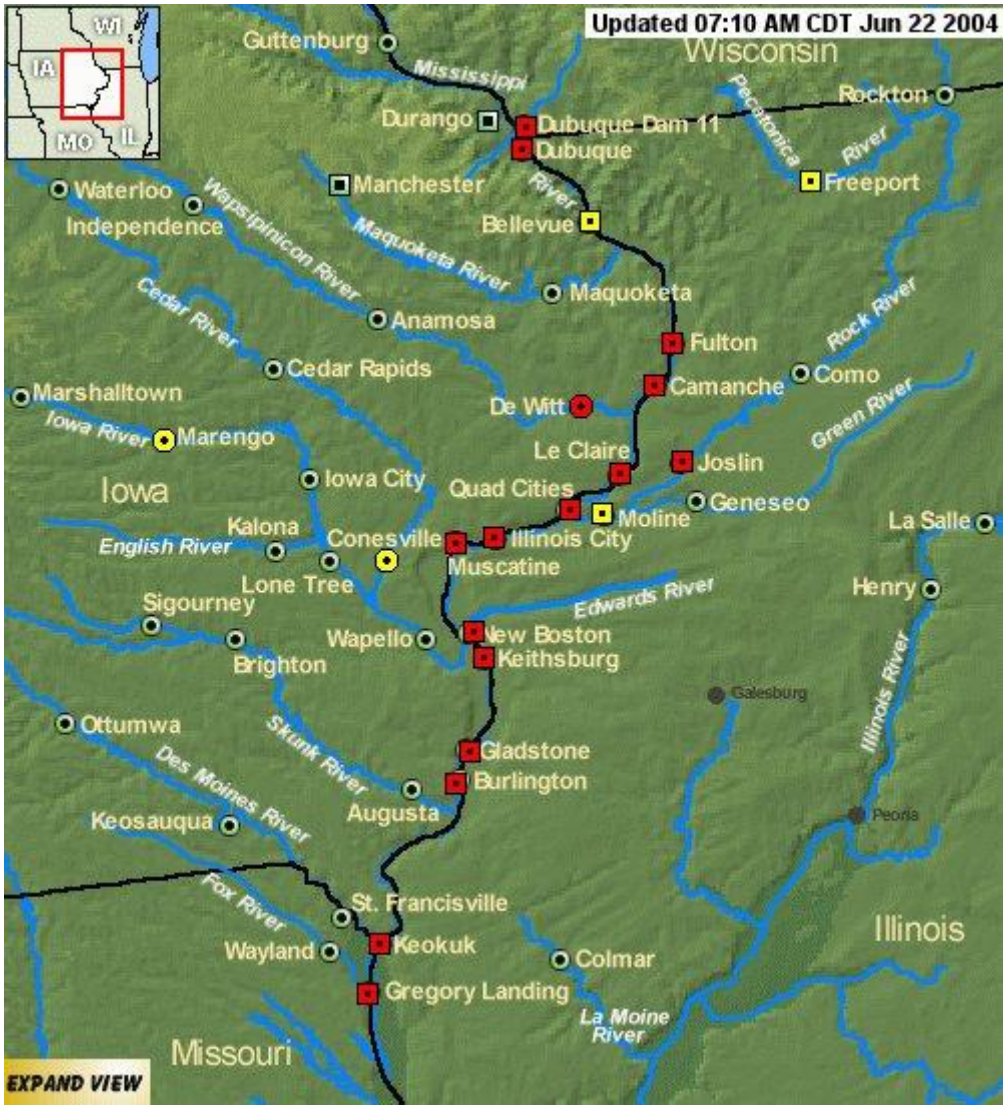
Questionnaire – English continued



Questionnaire – English continued

32) If the viewer uses his/her mouse to click on an area of interest on the national map, s/he is linked to a regional map as shown in the example below. Using a 10 point scale where 1 means poor and 10 means excellent, please rate this graphic on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about river conditions at a regional level



Map Legend

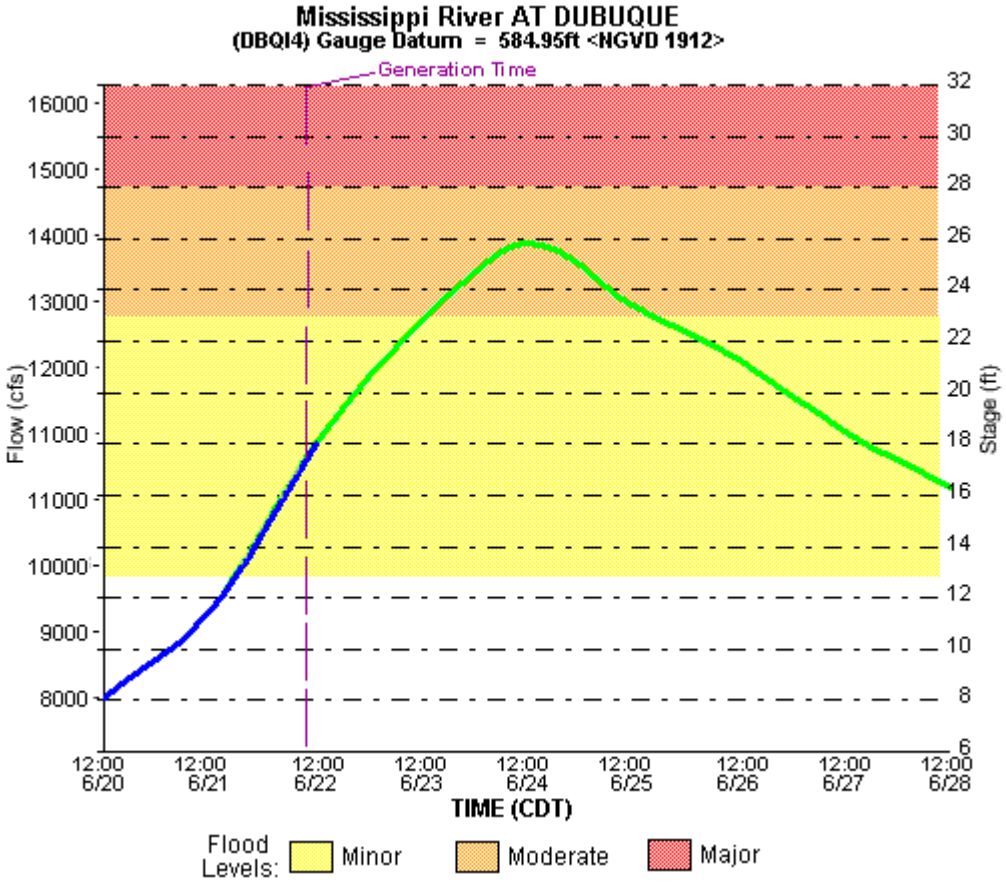
- or **at or above Flood Stage**
- or **high water, below Flood Stage**
- or **below Flood Stage**
- or **observation more than 12 hours old**
- or **neighboring area point**
- A square indicates that hydrograph information is available
- A circle indicates that both probability and hydrograph information are available

Questionnaire – English continued

33) Following is a hydrograph, which shows degrees of flood severity. Using a 10 point scale where 1 means poor and 10 means excellent, now please rate the hydrograph on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about river conditions

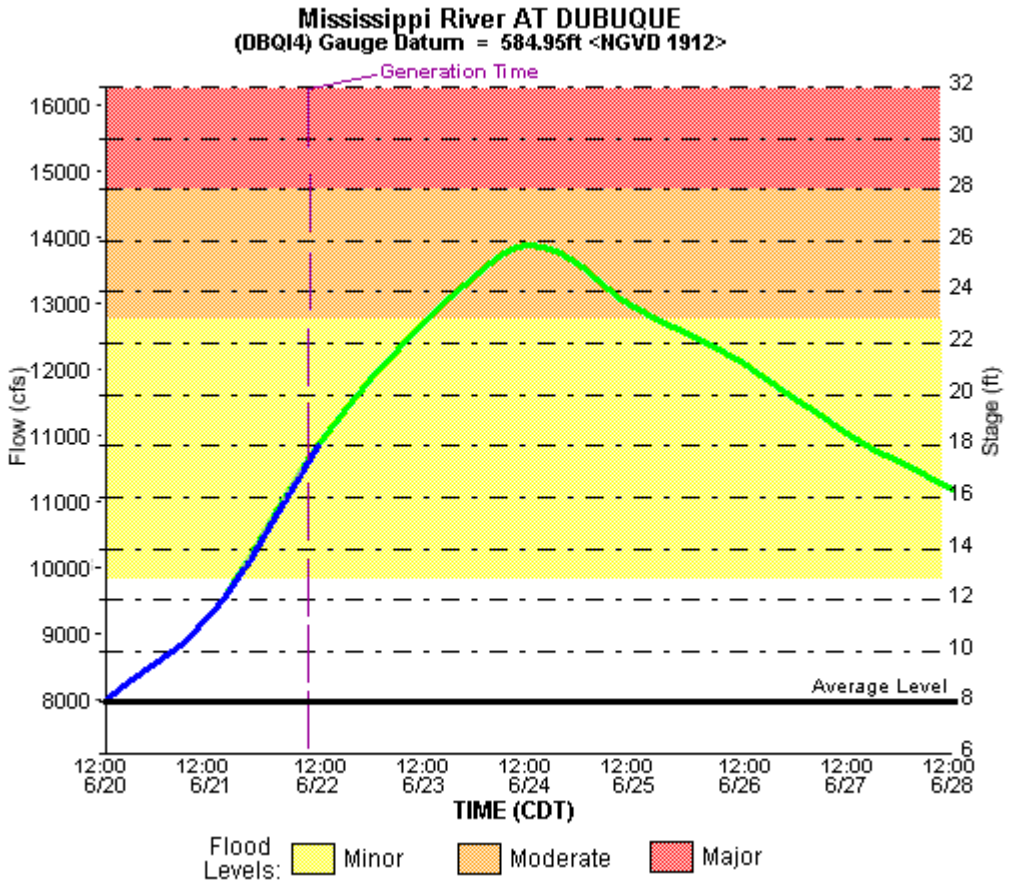
Mississippi River at Dubuque
Flood Stage: 17 Feet
Latest Stage:18.14 **Feet at 05:30 CDT 06/22**



Questionnaire – English continued

34).The hydrograph below also includes an indication of the average river level. Using a 10 point scale where 1 means poor and 10 means excellent, please rate this hydrograph on the following:

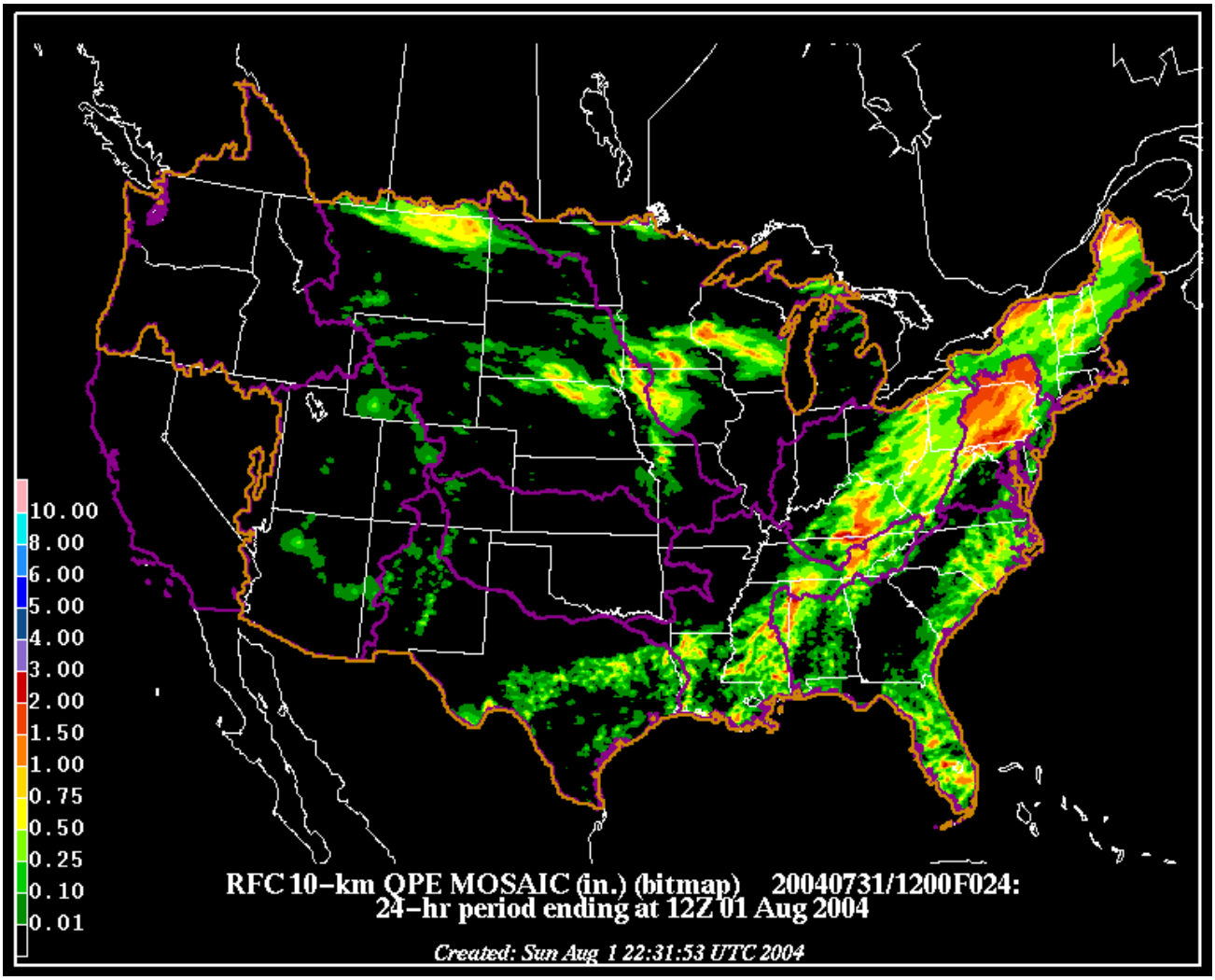
a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about river conditions



Questionnaire – English continued

35) The NWS combines rain gauge and radar data to create a national precipitation analysis such as that shown below. Do you currently use this information?

a. Yes
b. No



36) Using a 10 point scale where 1 is poor and 10 is excellent, please rate the graphic above depicting a national precipitation analysis using rain gauge and radar data on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about national precipitation

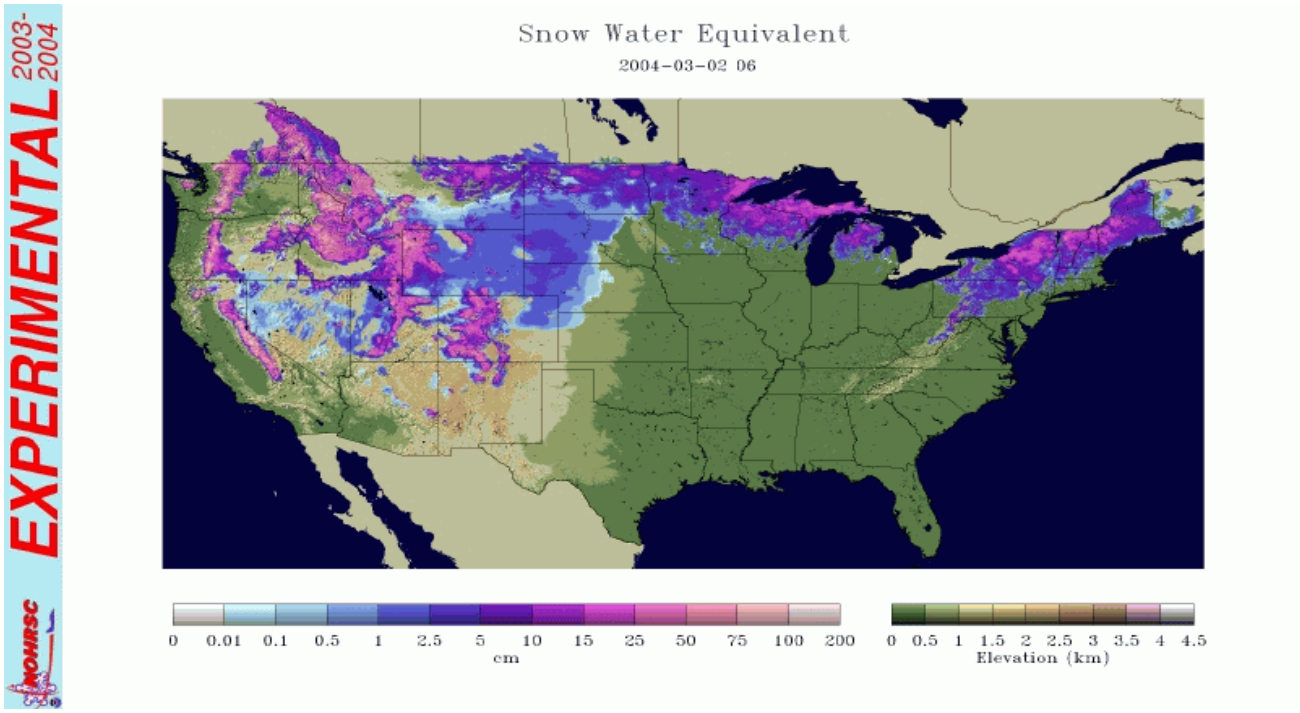
37) In what format(s) would you like to receive quantitative precipitation information? Select all that apply.

a. Graphical (as a Web page)
b. A gridded array (i.e. using the GRIB format)
c. In a GIS-compatible format
d. XML
e. Other (please specify)

Questionnaire – English continued

38) Using a modeling system, the NWS combines observational snow information to provide a national analysis of the amount of water in the snow pack (i.e., snow water equivalent) – an example is shown below.
Do you currently use this information?

a. Yes
b. No



39) Using a 10 point scale where 1 means poor and 10 means excellent, please rate the graphic above that depicts a national analysis of the amount of water in the snow pack on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about snow pack water amounts

40) In what format(s) would you like to receive snow water equivalent information? Select all that apply.

a. Graphical (as a Web page)
b. A gridded array (i.e. using the GRIB format)
c. In a GIS-compatible format
d. XML
e. Other (please specify)

Questionnaire – English continued

IX. Uncertainty and Probability

41) Forecasts of river levels involve a degree of uncertainty. To reflect this, forecasts can be provided as a range of possible values (e.g., the river will crest between 11 and 12 feet above flood stage). Using a 10 point scale where 1 means Not at all Useful and 10 means Very Useful, please rate how useful it would be to have forecasts include uncertainty information.

42) Uncertainty can also be expressed in terms of probabilities (i.e., there is a 70% chance the river will exceed flood stage by 11 feet). Using a 10 point scale where 1 means Not at all Useful and 10 means Very Useful, please rate how useful it would be to have forecasts include probability information.

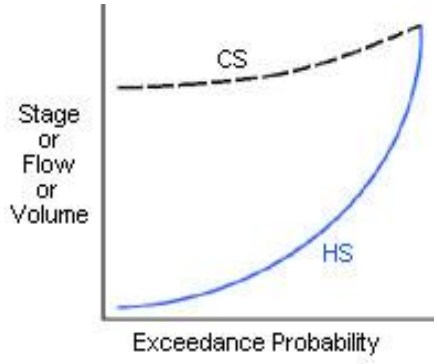
43) Forecast uncertainty typically increases with the length of the forecast (i.e., the uncertainty in short-term forecasts is usually less than for long-term forecasts). Using a 10 point scale where 1 means Not at all Useful and 10 means Very Useful, please rate the usefulness of providing information regarding uncertainty of river forecasts for the following time scales.

a. Short-term flooding
b. Long-term water supply

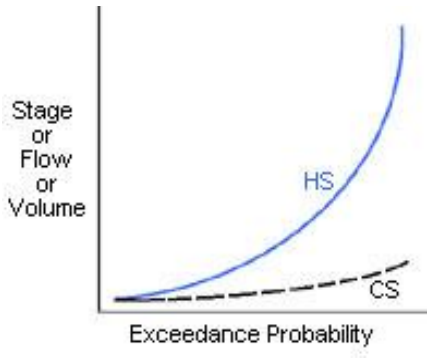
The following questions seek your assessment of the utility of several specific examples of how probabilistic forecasts can be depicted graphically.

The graphic following the next question shows chances of the river stage going above various levels during a 90-day period. The **conditional simulation (CS)** line indicates chances of the river going above given levels based on current conditions. The **historical simulation (HS)** line indicates the chances of the river going above given levels based on the total range of past levels. The gray, blue and red shading show the flood severity. These long-range forecasts allow you to see what computer simulations can tell us about extended periods.

Here are some possible scenarios to help you understand the graphic following the next question:



More wet than "normal" conditions over the forecast period. The chances are greater for wet conditions, as indicated by the **Conditional Simulation**, over the entire range of possible outcomes.



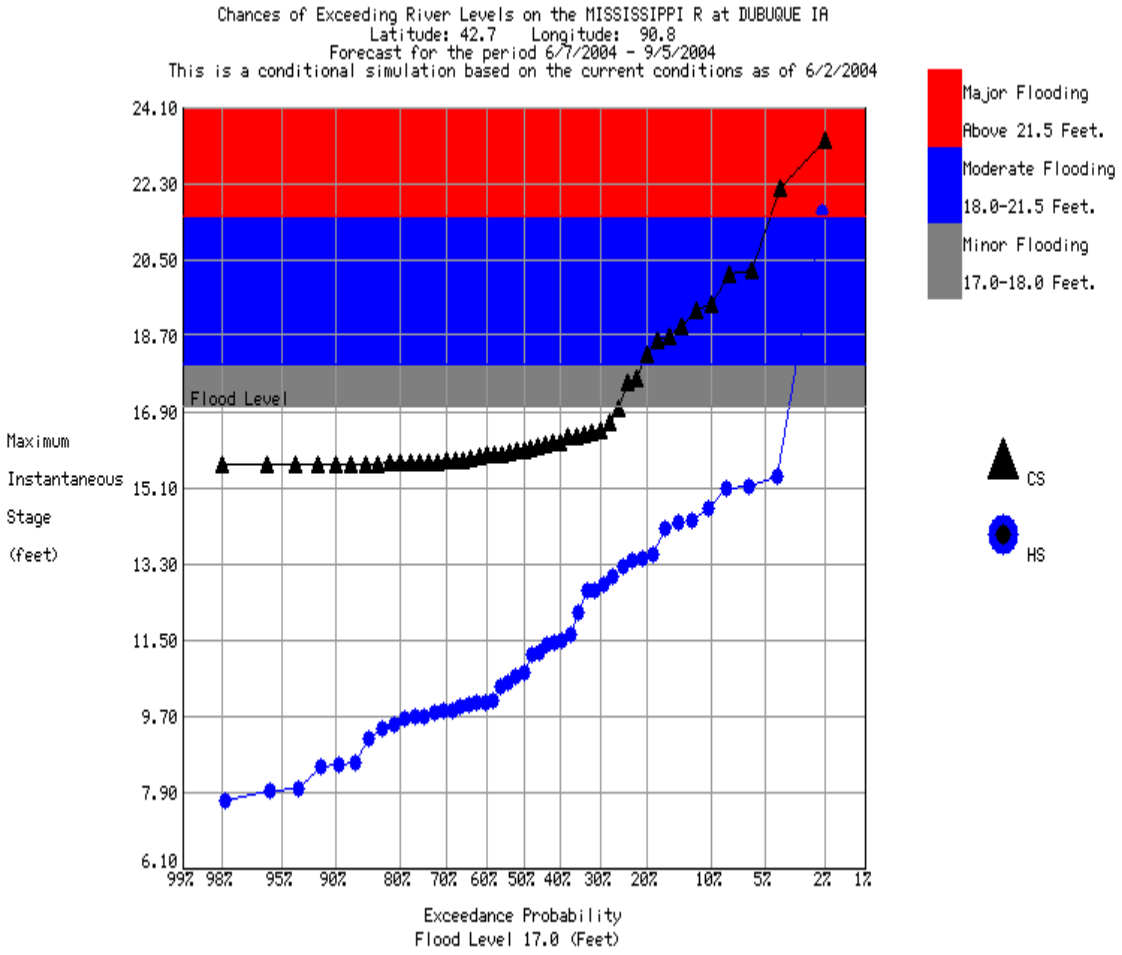
More dry than "normal" conditions over the forecast period. The chances are greater for dry conditions, as indicated by the **Conditional Simulation**, over the entire range of possible outcomes.

When the two simulations are very close across the entire range, the chances of the river going over a certain level are similar to the total range of past levels.

Questionnaire – English continued

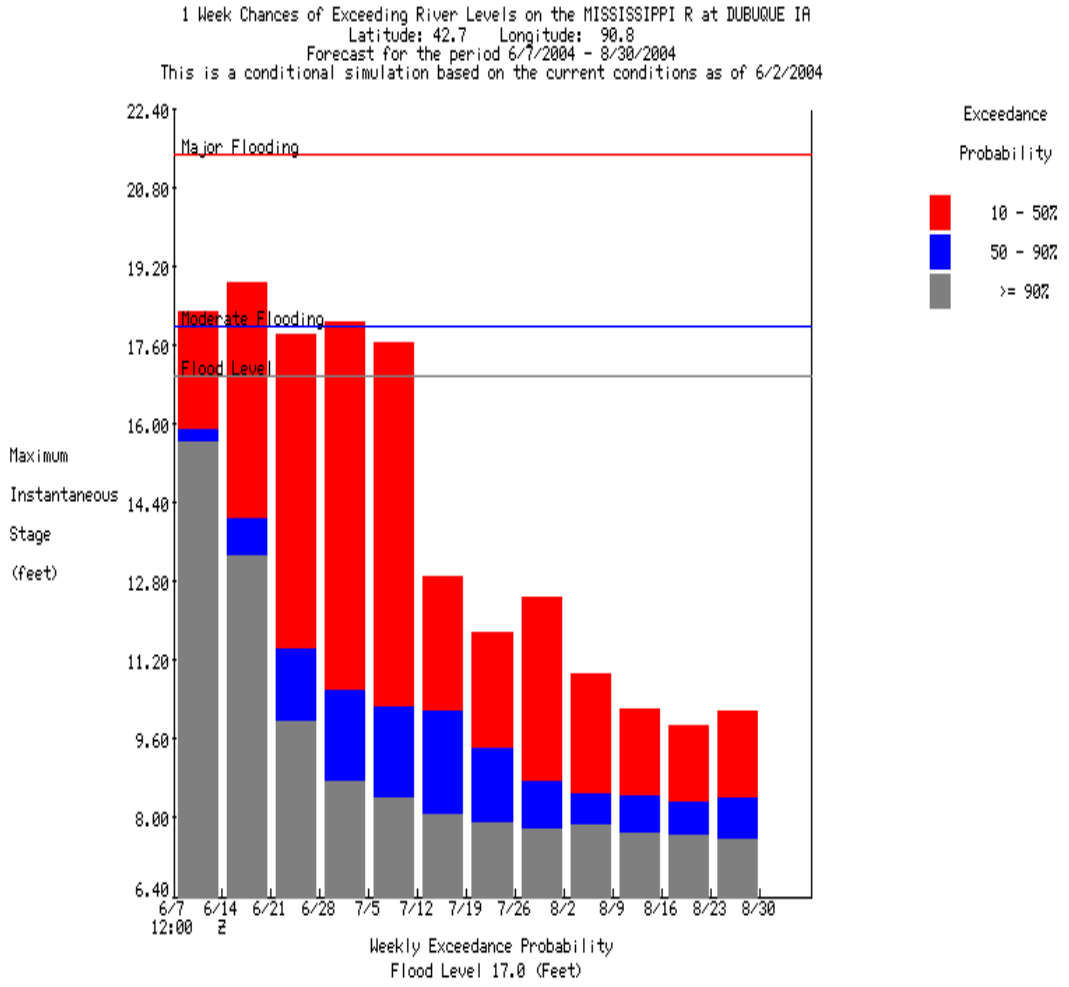
44) Now, using a 10 point scale where 1 means poor and 10 means excellent, please rate the graphic below that communicates the chance of exceeding a given river stage during the 90 day forecast period on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about river stages during a 90 day forecast period



Questionnaire – English continued

The graphic below shows the probability the maximum stage at a point on a river will exceed a particular value in a 90 day forecast. The vertical axis shows river stage measured in feet (ft) and the horizontal axis shows time. Each vertical bar represents the exceedance probabilities for a 7 day period. Color is used to indicate probability levels.



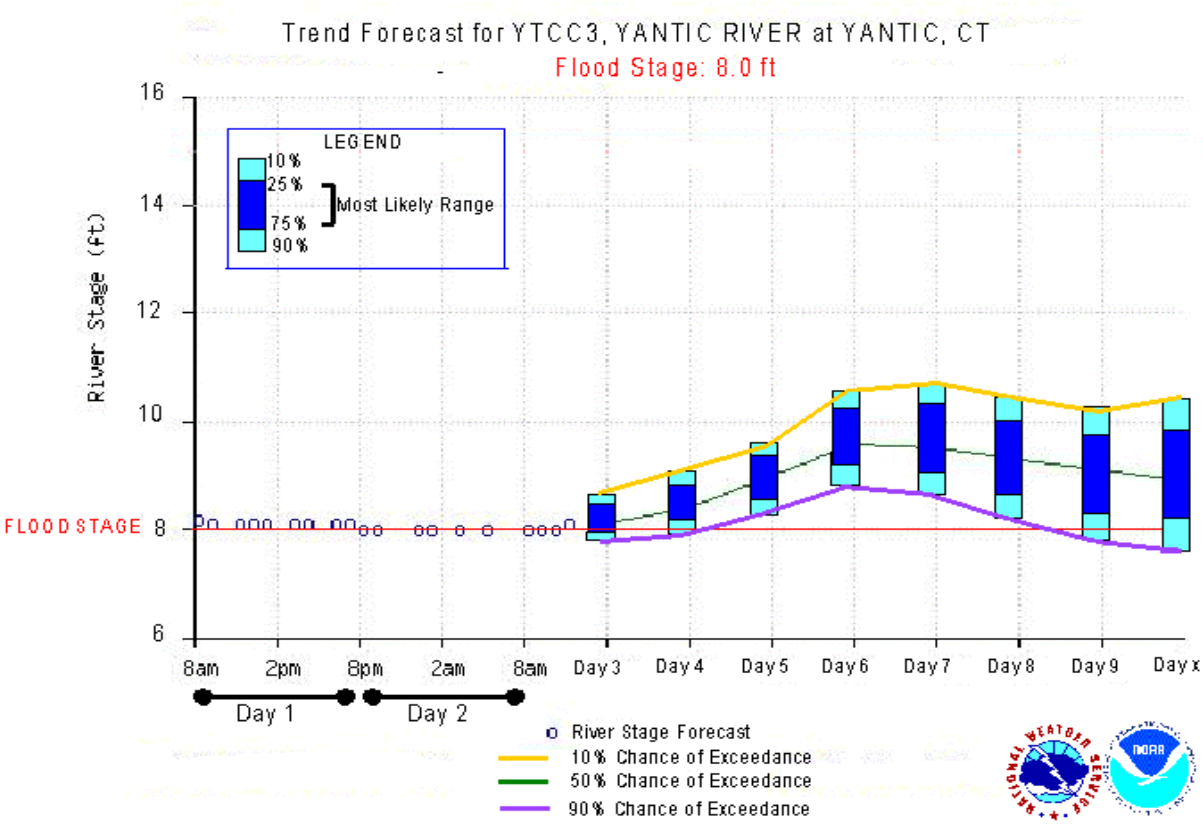
45) Using a 10 point scale where 1 means poor and 10 means excellent, please rate the graphic above that depicts the chance of exceeding a given river stage during any given week over the next 90 days on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about a given river stage during any given week over the next 90 days

The prior two graphics are used to convey long term probability information.

For shorter range river forecasts, the graphic below depicts an alternate means of conveying probability information.

Questionnaire – English continued



46) Using a 10 point scale where 1 means poor and 10 means excellent, please rate this graphic that depicts the chance of exceeding a given river stage during the next X days on the following:

a. Visual appeal
b. Ease of understanding
c. Tells me what I need to know about a river stage on a daily basis

A commonly used term associated with flood risk is the "100-year flood." The 100-year flood is based on statistical analysis and estimates a water level that will be reached, on average, once every hundred years. In terms of probability, it is a level that has a 1% chance of occurrence in any given year.

47) Using a 10 point scale where 1 means not at all useful and 10 means very useful, please rate how useful it would be to include the 100-year water level to characterize flooding in NWS products.

Questionnaire – English continued

X. Concluding Questions

48) Please provide any additional comments on current NWS hydrologic services and/or suggestions on how the NWS could better serve your hydrologic needs.

49) The NWS is in the midst of a services modernization program, known as the Advanced Hydrologic Prediction Service (AHPS), to improve the quality of its hydrologic services. If you would be willing to let us contact you for additional feedback as we make decisions on how to implement AHPS, please complete the following:

a. Person to Contact:
b. e-mail address:
c. and/or
d. Phone number:

You have reached the end of the survey. Please click on the "Finish" button below to submit your survey.

The staff of the National Weather Service thanks you for your time and thoughtful feedback. Your input will be of great assistance as the agency works to improve its services.

Questionnaire – Spanish

Encuesta para el Programa de Servicios Hidrológicos del Servicio Nacional de Climatología (NWS)

El Servicio Nacional de Climatología, (National Weather Service, NWS) emite alertas sobre inundaciones, advertencias y avisos para la protección de la vida y de la propiedad. También tiene a su cargo proporcionar información para mejorar la economía nacional. El Programa de Servicios Hidrológicos de NWS se enfoca en proporcionar previsiones del tiempo, alertas y avisos sobre desbordamientos de ríos e inundaciones.

Este estudio es parte de un esfuerzo que se está llevando a cabo para determinar la satisfacción general de los usuarios de NWS y para obtener las sugerencias necesarias para mejorar los servicios. La encuesta se enfoca específicamente en el Programa de Servicios Hidrológicos de NWS.

I. Preguntas demográficas

Las siguientes preguntas tienen la intención de ayudarnos a comprender mejor sus respuestas, permitiéndonos que clasifiquemos sus respuestas por área geográfica y por tipos de usuarios. Al igual que con la totalidad del estudio, sus respuestas son completamente voluntarias y confidenciales.

1) ¿Cuál es su código postal?

2) ¿Cuál es el uso principal que hace de la información que le proporciona el NWS o qué sector comercial representa usted? (por favor, seleccione sólo una).

   a. Gerencia de emergencia
   b. Medios “tradicionales”(radio, TV, prensa)
   c. Internet/Web
   d. Abastecimiento de agua/hidráulica
   e. Agricultura
   f. Envío (por ej. barcazas)
   g. Gerencia de recursos naturales
   h. Consultoría/valor añadido/proporcionar servicios hidrológicos a medida
   i. Educación
   j. Recreación
   k. Uso personal
   l. Otros (por favor, especifique)

3) ¿Cuál es el alcance primario de su responsabilidad? (seleccione una)

   a. Nacional
   b. Regional (todos o parte de múltiples estados)
   c. Un sólo estado
   d. Todos o parte de múltiples condados
   e. Un sólo condado
   f. Gran ciudad/área urbana (población más grande de 100,000)
   g. Ciudad más pequeña/pueblo (población más pequeña de 100,000)
   h. Personal
   i. Otros (por favor especifique)

Questionnaire – Spanish continued

II. Productos hidrológicos actuales

1) ¿Cuál de los siguientes tipos de información hidrológica obtiene usted de NWS? (seleccione todo lo que se aplique)
   a. Información de inundaciones (alertas, avisos y declaraciones)
   b. Información sobre suministro de agua/reservas
   c. Información sobre sequía
   d. Información/previsiones rutinarias sobre ríos
   e. Información recreativa
   f. Información sobre precipitaciones (lluvia, nieve)
   g. Otra información (por favor especifique)

Si 4=a:
5) Piense acerca de la **información sobre inundaciones** proporcionada por el NWS (por ejemplo avisos, alertas, predicciones y declaraciones). En una escala de 10 puntos, en la que 1 significa malo y 10 excelente. Por favor califique la calidad de la información sobre inundaciones con respecto a lo siguiente:
   a. Claridad
   b. Concisión
   c. Prontitud
   d. Precisión
   e. Organización de la información
   f. Satisface mis necesidades

Si 4=b
6) Piense acerca de la **información sobre abastecimiento de agua/reservas** proporcionada por NWS, en una escala de 10 puntos donde 1 significa malo y 10 excelente. Por favor califique la calidad de la información sobre abastecimiento de agua/reservas con respecto a lo siguiente:
   a. Claridad
   b. Concisión
   c. Prontitud
   d. Precisión
   e. Organización de la información
   f. Satisface mis necesidades

Si 4=c
7) Piense acerca de la **información sobre sequía** proporcionada por NWS, en una escala de 10 puntos, donde 1 significa malo y 10 excelente. Por favor califique la calidad de la información sobre sequía con respecto a lo siguiente:
   a. Claridad
   b. Concisión
   c. Prontitud
   d. Precisión
   e. Organización de la información
   f. Satisface mis necesidades

Si 4=d
8) Piense acerca de la **información/previsiones rutinarias sobre ríos** proporcionada por NWS, en una escala de 10 puntos donde 1 significa malo y 10 excelente. Por favor califique la calidad de la información/previsiones rutinarias sobre ríos con respecto a lo siguiente:
   a. Claridad
   b. Concisión
   c. Prontitud
   d. Precisión
   e. Organización de la información
   f. Satisface mis necesidades

Questionnaire – Spanish continued

Si 4=e
9) Piense acerca de la **información de recreación** proporcionada por NWS, en una escala de 10 puntos, donde 1 significa malo y 10 excelente. Por favor califique la calidad de la información de recreación con respecto a lo siguiente:

a. Claridad
b. Concisión
c. Prontitud
d. Precisión
e. Organización de la información
f. Satisface mis necesidades

Si 4=f
9) Piense acerca de la **información sobre precipitaciones** proporcionada por NWS, en una escala de 10 puntos, donde 1 significa malo y 10 excelente. Por favor califique la calidad de la información de recreación con respecto a lo siguiente:

a. Claridad
b. Concisión
c. Prontitud
d. Precisión
e. Organización de la información
f. Satisface mis necesidades

10) ¿Por qué medios recibe usted productos hidrológicos de NWS basados en Textos (por ej. alertas sobre inundaciones)? (Seleccione todo lo que se aplique)

a. Páginas Web de NWS
b. Páginas Web que no pertenecen al NWS
c. Teléfono
d. Radio sobre el tiempo NOAA
e. Cables sobre el tiempo NOAA
f. Familia de Servicios (Family of Services, FOS)
g. Red de Información del Tiempo para Gerentes de Emergencias (Emergency Managers Weather Information Network, EMWIN)
h. TV local o cable
i. Radio comercial
j. Contratista privado
k. Otros (por favor, especifique)

NWS está proporcionando cada vez más información en diferentes formatos. Las siguientes preguntas se refieren a cómo podemos proporcionarle de forma más efectiva la información en distintas categorías.

11) Por favor, califique los siguientes formatos para recibir información sobre **inundaciones súbitas/avisos sobre inundaciones y alertas** del NWS, utilizando una escala de 10 puntos donde el 1 no está muy cercano a lo ideal y el 10 está muy cerca de lo ideal.

a. Texto
b. Gráficos
c. Una combinación de Texto y gráficos
d. Radio del tiempo NOAA

12) Por favor, califique los siguientes formatos para recibir información sobre **previsiones de ríos** del NWS, utilizando una escala de 10 puntos donde el 1 no está muy cercano a lo ideal y el 10 está muy cerca de lo ideal.

a. Texto
b. Gráficos
c. Una combinación de texto y gráficos
d. Radio del Tiempo NOAA

Questionnaire – Spanish continued

13) Por favor, clasifique los siguientes formatos para recibir **observaciones sobre ríos/corrientes** del NWS, utilizando una escala de 10 puntos donde el 1 no está muy cerca de lo ideal y el 10 está muy cerca de lo ideal.

a. Texto
b. Gráficos
c. Una combinación de texto y gráficos
d. Radio del Tiempo NOAA

Questionnaire – Spanish continued

III. Riesgo de inundaciones

El NWS categoriza la severidad de las inundaciones para comunicarle de forma más efectiva el impacto de las inundaciones. Utiliza las siguientes categorías:

Inundación menor – daño a la propiedad mínimo o ningún daño, pero posiblemente algún tipo de amenaza pública o inconveniente.
Inundaciones moderadas – algunas inundaciones de estructuras y carreteras cercanas. Serán necesarias algunas evacuaciones de personas y/o transferencia de la propiedad a elevaciones superiores si es necesario.
Inundaciones grandes – extensa inundación de estructuras y carreteras. Evacuaciones significativas de personas y/o transferencia de propiedad a elevaciones superiores.

14) ¿Está usted familiarizado con la forma en la que estos términos se utilizan por NWS en sus avisos sobre inundaciones?

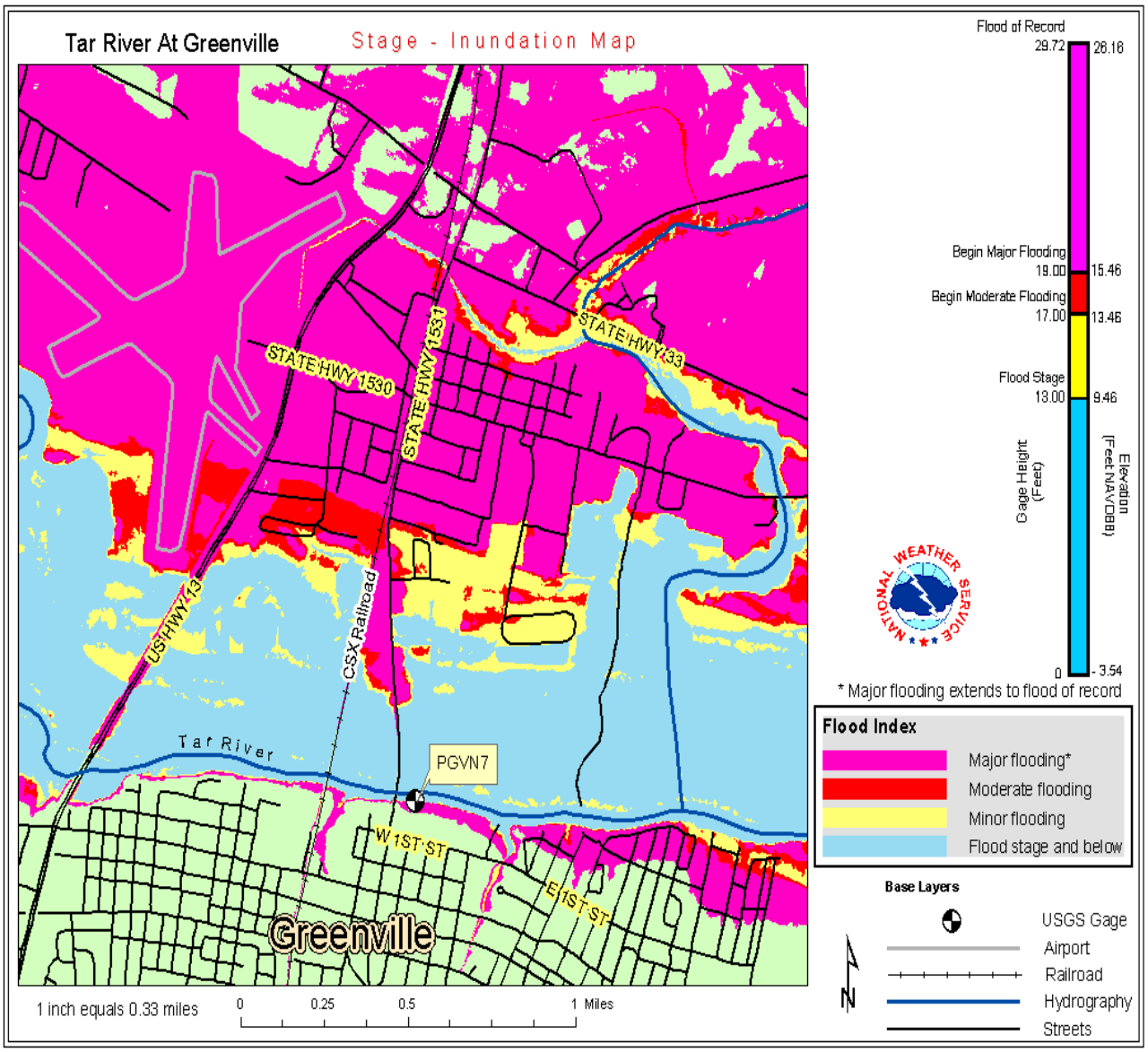
a. Sí
b. No

15) Utilizando una escala de 10 puntos donde 1 significa ninguna utilidad y 10 significa muy útil, por favor califique la utilidad de estas categorías de severidad de inundaciones para interpretar el impacto de las inundaciones de ríos.

16) Sí ha dado un 5 o menos a la pregunta 15, ¿qué puede hacer el NWS para que estas categorías de severidad de inundaciones resulten más útiles? (respuesta abierta)

Questionnaire – Spanish continued

El NWS ha combinado recientemente las categorías de severidad de las inundaciones con información sobre la elevación del terreno para representar en forma de mapa el área impactada por cada categoría de inundación. Abajo se muestra un ejemplo.



17) Utilizando una escala de 10 puntos, donde 1 significa malo y 10 excelente. Por favor califique el mapa gráfico de severidad de la inundación sobre lo siguiente:

a. Atractivo visual
b. Facilidad de comprensión
c. Me dice qué es lo que necesito saber acerca de la severidad de las inundaciones

Questionnaire – Spanish continued

IV. Modos de acceso adicionales

El NWS está considerando proporcionar información utilizando modos de acceso y formatos adicionales, enfocados principalmente en hacer que el proceso de datos automatizado sea más eficiente.

18) ¿Utiliza usted ahora o planea utilizar un proceso automatizado de la información hidrológica?

a. Sí
b. No (pase a la pregunta 21)

19) Por favor califique los siguientes modos utilizando una escala de 10 puntos, donde 1 no está muy cercano a lo ideal y 10 está muy cercano a lo ideal.

a. Utilizar una interfaz gráfica basada en Internet (por ej. un menú) para seleccionar información para descargar.
b. Buscar en una base de datos (por ej., acceder directamente a información específica).
c. Descarga al por mayor de información (por ej. ftp)

20) Por favor, califique los siguientes formatos de datos utilizando una escala de 10 puntos, donde 1 no está muy cercano a lo ideal y 10 está muy cercano a lo ideal. Por favor enumere cualquier modo de acceso adicional y formato que no se haya mencionado y que a usted le gustaría que NWS considerara para hacer el proceso automatizado de datos más eficiente.

a. XML
b. En un formato compatible con GIS

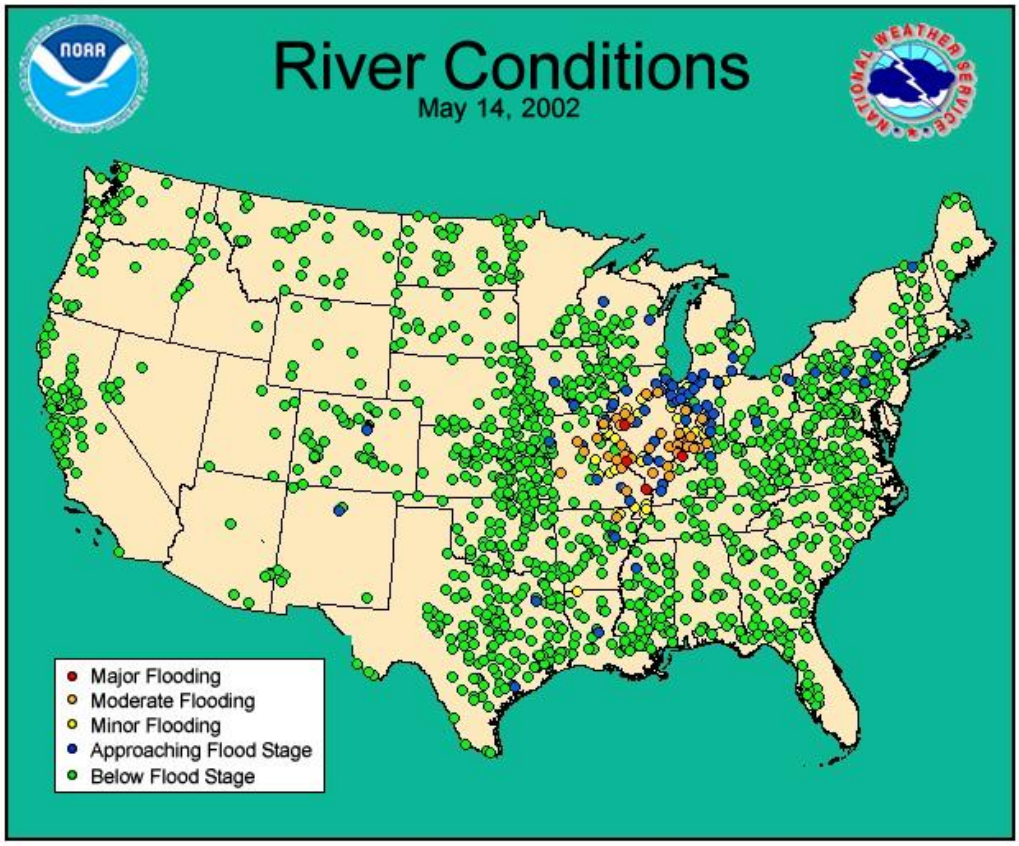
Questionnaire – Spanish continued

V. Gráficos

El Servicio Nacional de Climatología tiene páginas Web que permiten a los usuarios agrandar un mapa nacional a un nivel regional, a una localización en un punto a lo largo de un río donde se puede obtener información hidrológica detallada. Para proporcionar a nuestros clientes los gráficos más útiles en línea, por favor responda a las siguientes preguntas. Las siguientes preguntas están basadas en los gráficos que se pueden ver desde estas páginas Web o bien en los que estamos considerando para un desarrollo en el futuro.

21) El gráfico abajo proporciona una visión general de las condiciones del río a través de los Estados Unidos continentales. Utilizando una escala de 10 puntos, donde 1 signifique malo y 10 signifique excelente, por favor clasifique las condiciones del mapa con respecto a lo siguiente:

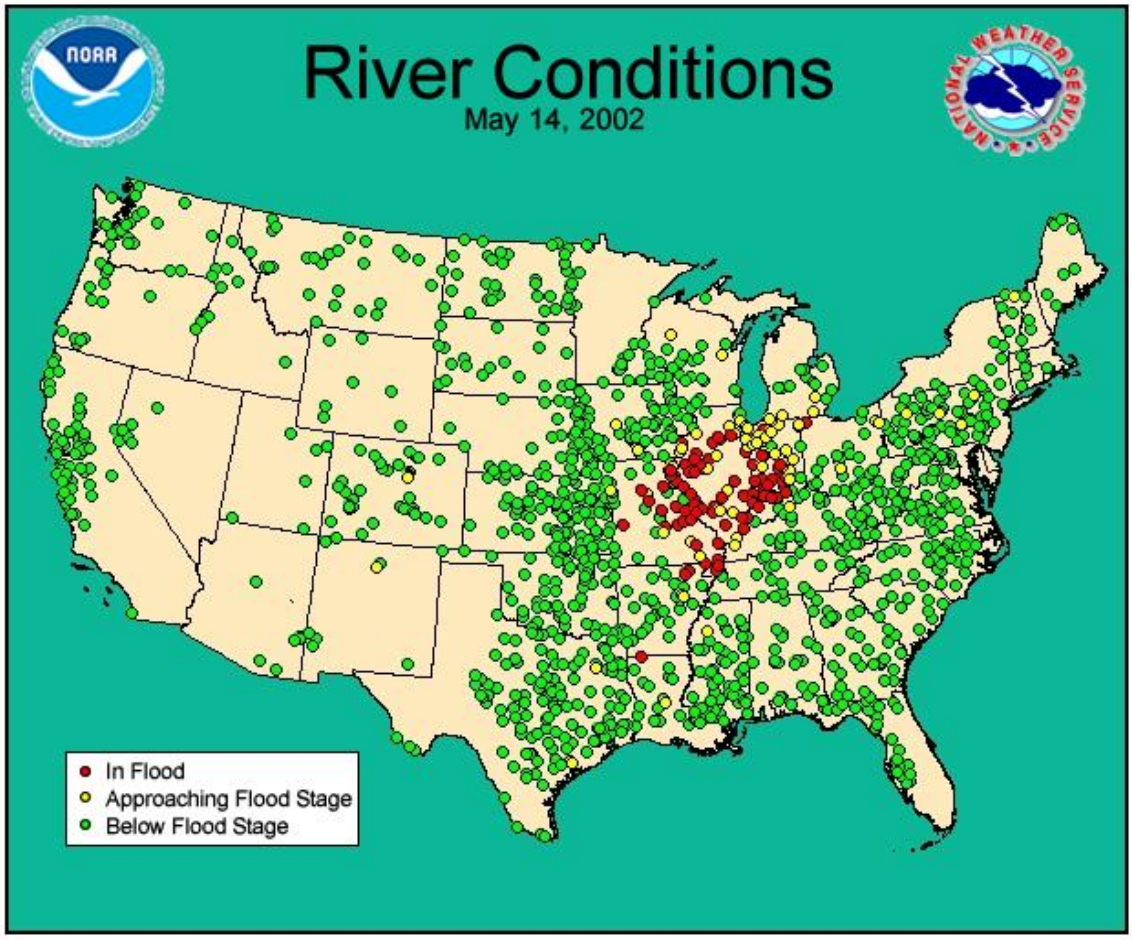
a. Atractivo visual
b. Facilidad de comprensión
c. Me dice lo que necesito saber acerca de las condiciones del río, a nivel nacional



22) Abajo tiene el mismo mapa, describiendo condiciones en los ríos de una forma ligeramente diferente. Utilizando la misma escala de 10 puntos donde 1 significa malo y 10 significa excelente, califique ahora por favor el mapa de condiciones de los ríos con respecto a lo siguiente:

a. Atractivo visual
b. Facilidad de comprensión
c. Me dice lo que necesito saber acerca de las condiciones de los ríos en a nivel nacional

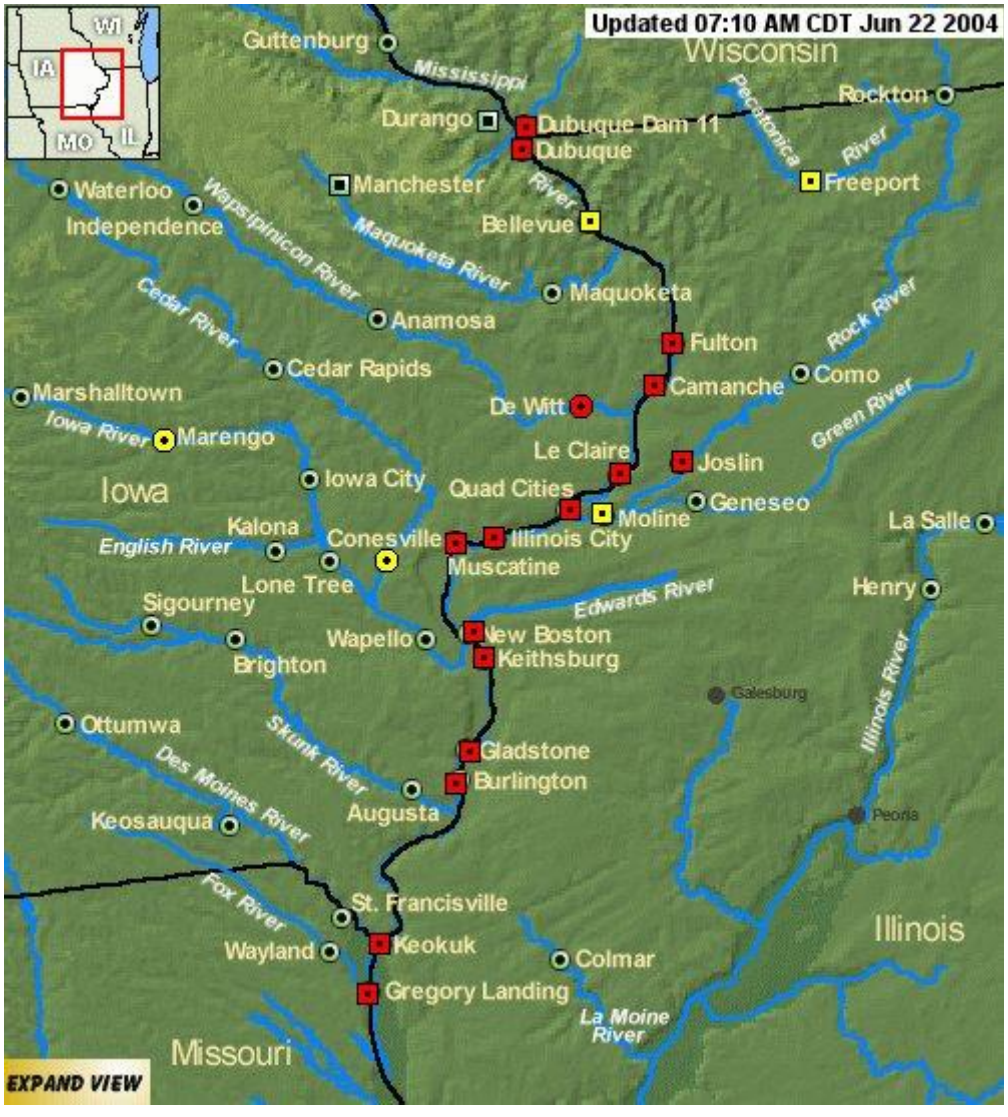
Questionnaire – Spanish continued



Questionnaire – Spanish continued

23) Si el usuario utiliza su ratón para hacer clic en un área de interés en el mapa nacional, estará enlazado a un mapa regional como se muestra en el ejemplo abajo. Utilizando una escala de 10 puntos donde 1 significa malo y 10 excelente, por favor califique este gráfico con respecto a los siguiente:

a. Apariencia visual
b. Facilidad de comprensión
c. Me dice lo que necesito saber acerca de las condiciones del río a nivel regional



Map Legend

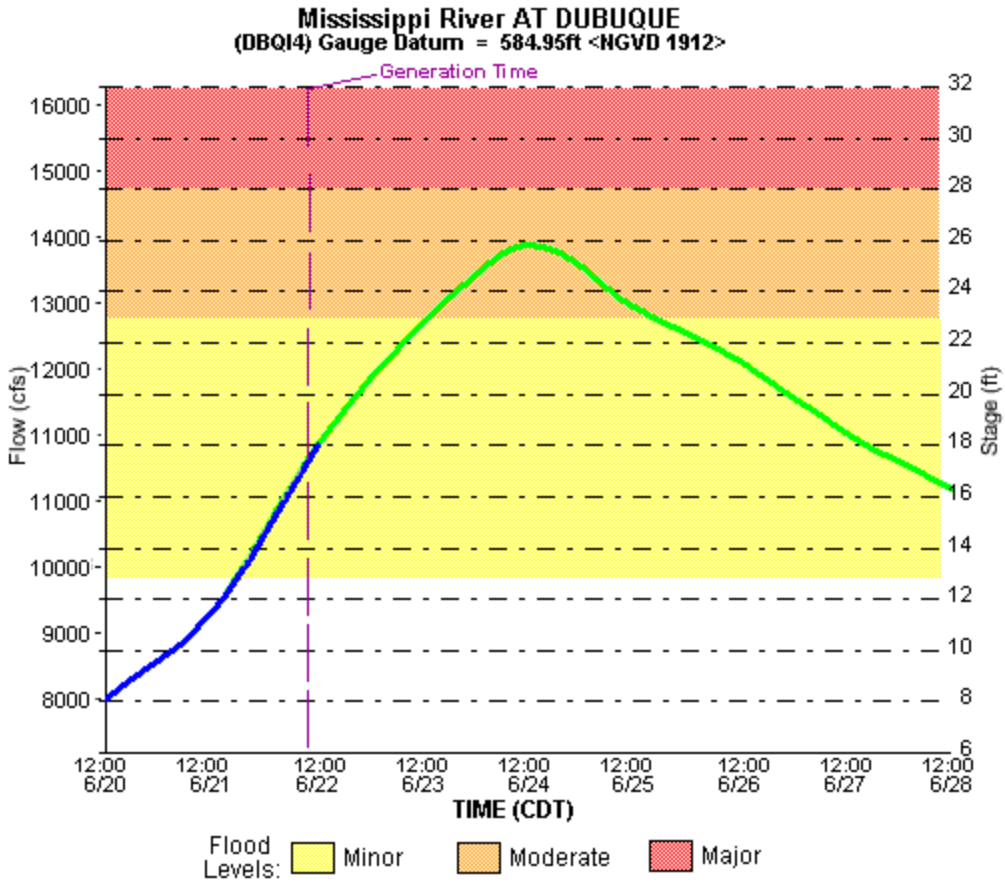
- or **at or above Flood Stage**
- or **high water, below Flood Stage**
- or **below Flood Stage**
- or **observation more than 12 hours old**
- or **neighboring area point**
- A square indicates that hydrograph information is available
- A circle indicates that both probability and hydrograph information are available

Questionnaire – Spanish continued

24) A continuación hay un hidrógrafo, que muestra los grados de severidad en las inundaciones. Utilizando una escala de 10 puntos donde 1 significa malo y 10 significa excelente, por favor califique el hidrógrafo con respecto a lo siguiente:

a. Apariencia visual
b. Facilidad de comprensión
c. Me dice lo que tengo que hacer acerca de las condiciones de los ríos

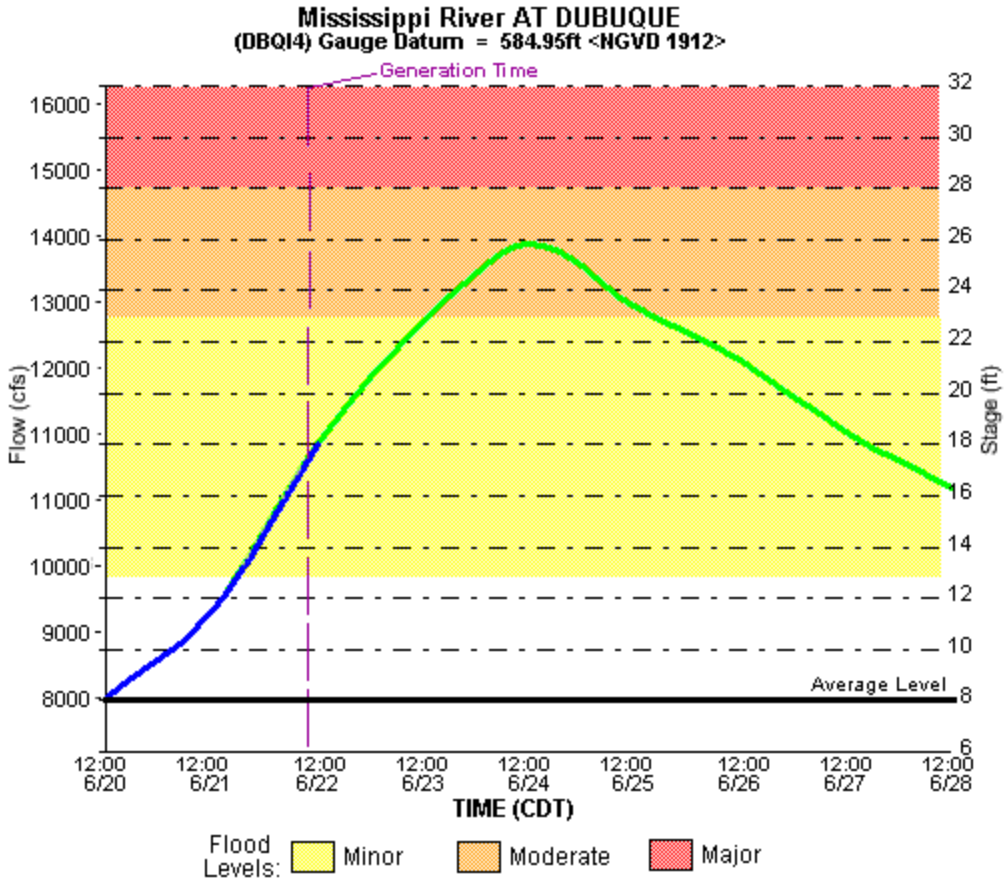
Río Mississippi en Dubuque
Situación de la inundación: 17 pies
Última situación:18.14 **pies a las 05:30 CDT 06/22**



25) El hidrógrafo abajo también incluye una indicación sobre el nivel medio del río. Utilizando una escala de 10 donde 1 significa malo y 10 significa excelente, por favor, califique este hidrógrafo con respecto a lo siguiente:

a. Apariencia visual
b. Facilidad de comprensión
c. Me dice qué es lo que necesito hacer acerca de las condiciones de los ríos

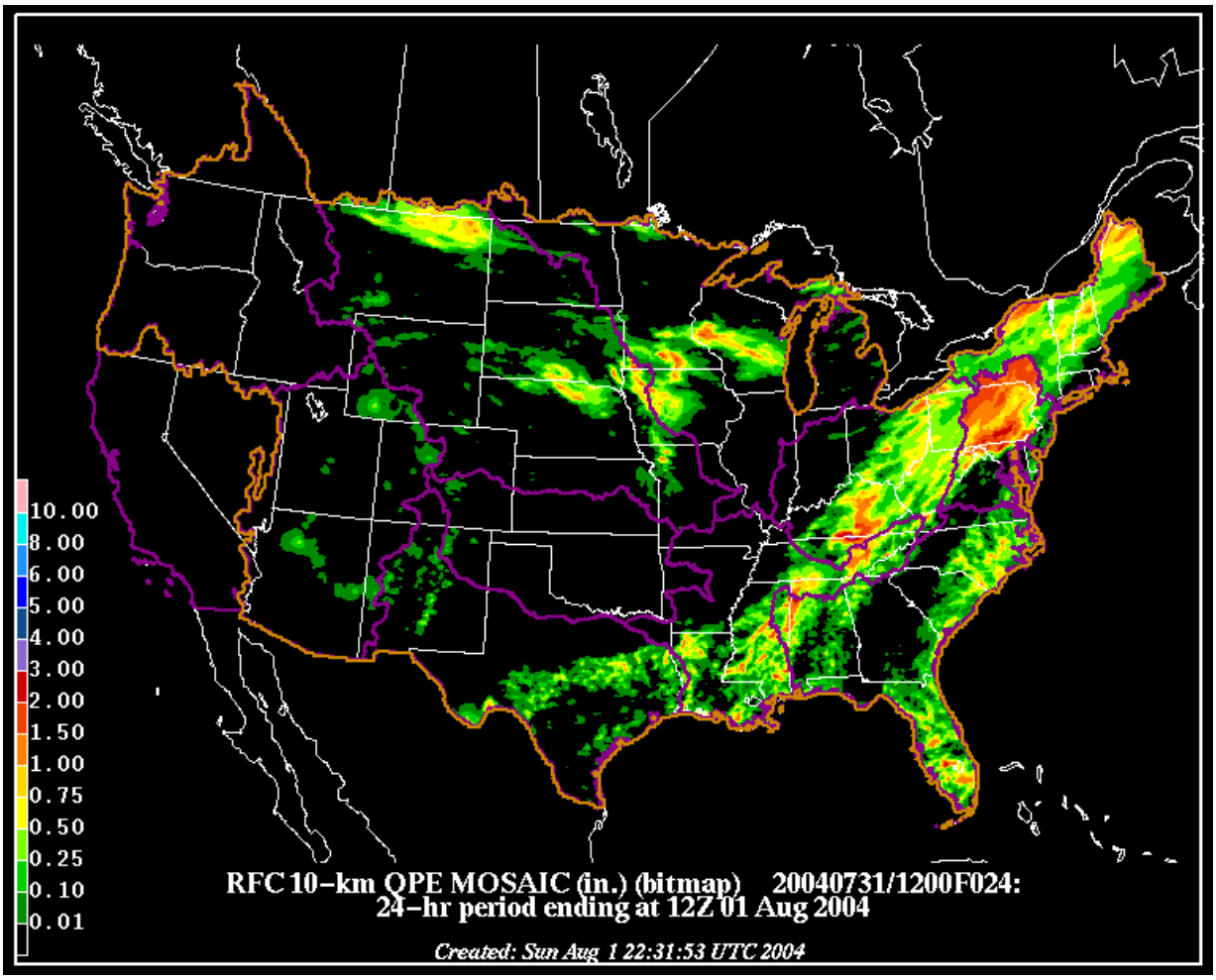
Questionnaire – Spanish continued



Questionnaire – Spanish continued

26) El NWS combina datos de recogida de lluvias y de radar para crear un análisis de precipitaciones como el que se muestra abajo. ¿Utiliza usted actualmente esta información?

a. Sí
b. No



27) Utilizando una escala de 10 puntos donde 1 es malo y 10 es excelente, por favor califique el gráfico de arriba que describe un análisis de las precipitaciones nacionales utilizando datos de recogida de lluvias y de radar con respecto a lo siguiente:

a. Atractivo visual
b. Facilidad de comprensión
c. Me dice lo que necesito saber acerca de las precipitaciones nacionales

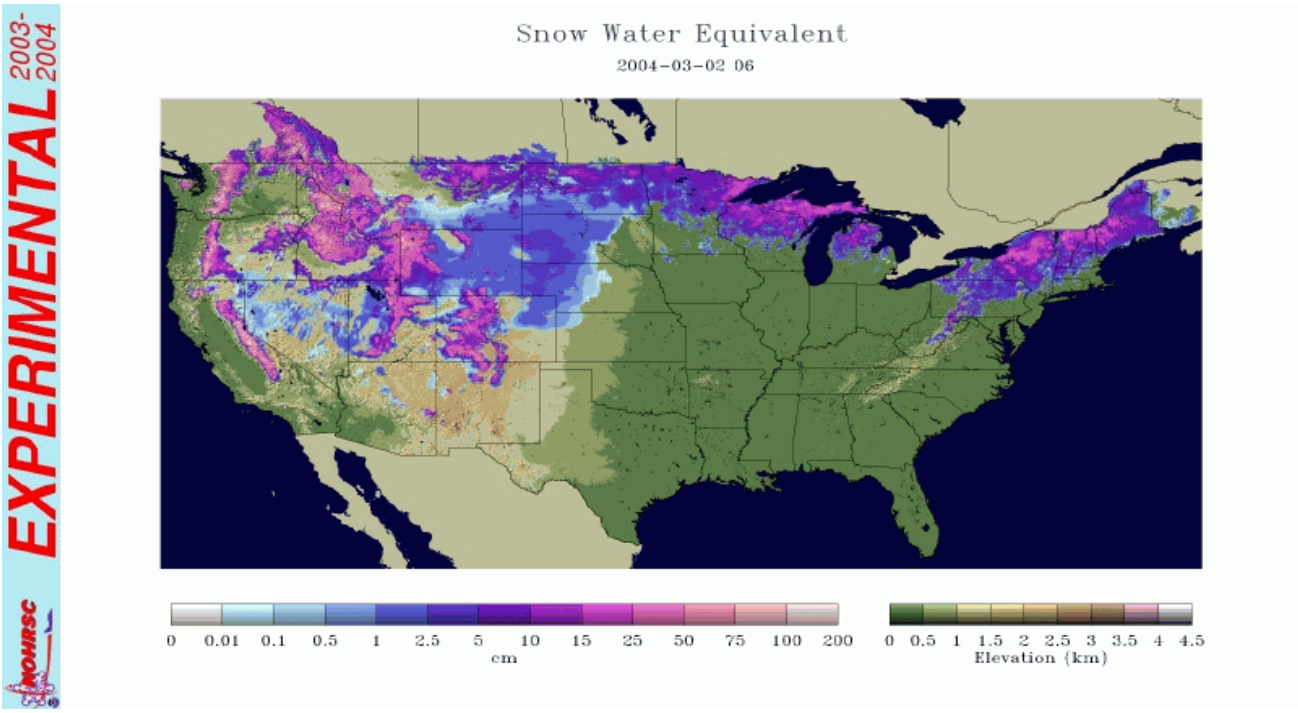
28) ¿En qué formato(s) le gustaría a usted recibir información cuantitativa sobre las precipitaciones? Seleccione todo lo que se aplique.

a. Gráfica (como una página Web)
b. Una estructura en rejilla (por ej. utilizando el formato GRIB)
c. En un formato compatible con GIS
d. XML
e. Otros (por favor especifique)

Questionnaire – Spanish continued

29) Utilizando un sistema de modelado, NWS combina la información de observación sobre nieve para proporcionar un análisis nacional de la cantidad de agua en el paquete de nieve (por ej. el equivalente en agua de nieve). Abajo se muestra un ejemplo.
¿Utiliza usted actualmente esta información?

a. Sí
b. No



30) Utilizando una escala de 10 puntos, donde 1 significa malo y 10 significa excelente, por favor clasifique el gráfico arriba que describe un análisis nacional de la cantidad de agua en el paquete de nieve con respecto a lo siguiente:

a. Atractivo visual
b. Facilidad de comprensión
c. Me dice lo que necesito saber acerca de cantidades de agua en la capa de nieve.

31) ¿En qué formato(s) le gustaría a usted recibir la información equivalente al agua en la nieve? Seleccione todas las que se apliquen.

a. Gráfico (como una página Web)
b. Como una estructura de rejilla (por ej. utilizando el formato GRIB)
c. En un formato compatible con GIS
d. XML
e. Otros (por favor especifique)

Questionnaire – Spanish continued

VI. Incertidumbre y probabilidad

32) Las previsiones sobre los niveles de los ríos envuelven un cierto grado de incertidumbre. Para reflejar esto, las previsiones proporcionan una gama de posibles valores (por ej. el río crecerá entre 11 y 12 pies por encima de la situación de desbordamiento). Utilizando una escala de 10 puntos, donde 1 significa ninguna utilidad para nada y 10 significa muy útil, por favor califique lo útil que sería hacer que las previsiones incluyeran información de incertidumbre.

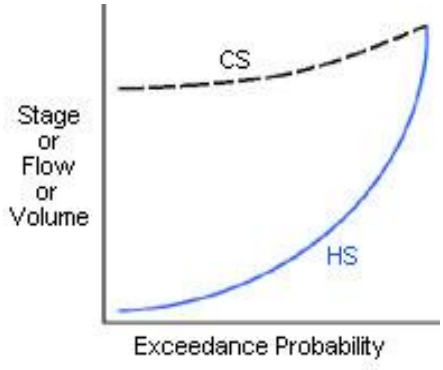
33) La incertidumbre también se puede expresar en términos de probabilidades (por ej. hay una posibilidad del 70% de que el río exceda la situación de desbordamiento en 11 pies). Utilizando una escala de 10 puntos donde 1 significa, ninguna utilidad y 10 significa muy útil, por favor clasifique lo útil que sería tener previsiones que incluyan probabilidad de información.

34) La incertidumbre de las previsiones aumenta típicamente con la longitud de la precisión (por ej. la incertidumbre en las previsiones a corto plazo es generalmente menor que para las previsiones a largo plazo). Utilizando una escala de 10 puntos, en la que 1 significa ninguna utilidad y 10 muy útil, por favor clasifique la utilidad de proporcionar información con respecto a la incertidumbre de las previsiones para los ríos para las siguientes escalas de tiempo.

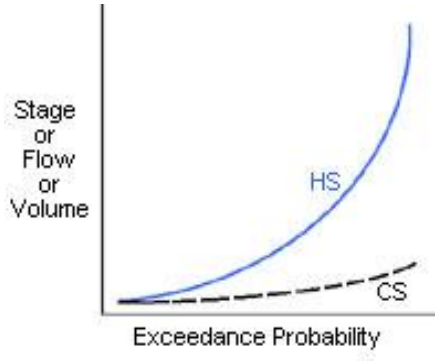
a. Inundaciones a corto plazo
b. Abastecimientos de agua a largo plazo

Las siguientes preguntas buscan su evaluación sobre la utilidad de varios ejemplos específicos sobre cómo las previsiones de probabilidades se pueden describir gráficamente.

El gráfico que sigue a la siguiente pregunta muestra las posibilidades de la situación del río de subir por encima de varios niveles durante un periodo de 90 días. La línea de **simulación condicional (CS)** indica las posibilidades de que el río suba por encima de los niveles dados, basándose en las condiciones actuales. La línea de **simulación histórica (HS)** muestra las posibilidades de que el río suba por encima de los niveles dados, basándose en el alcance total de los niveles del pasado. El sombreado gris, azul y rojo muestra la severidad de las inundaciones. Estas previsiones a largo plazo le permiten ver qué es lo que las simulaciones de computadora pueden decirnos acerca de extensos periodos de tiempo.
Aquí tiene algunos posibles escenarios que le ayudarán a comprender la siguiente pregunta gráfica:



Condiciones más húmedas de lo “normal” en el periodo de previsión. Las posibilidades son más grandes para condiciones húmedas como se indica por la **Simulación Condicional**, sobre la gama completa de posibles resultados.



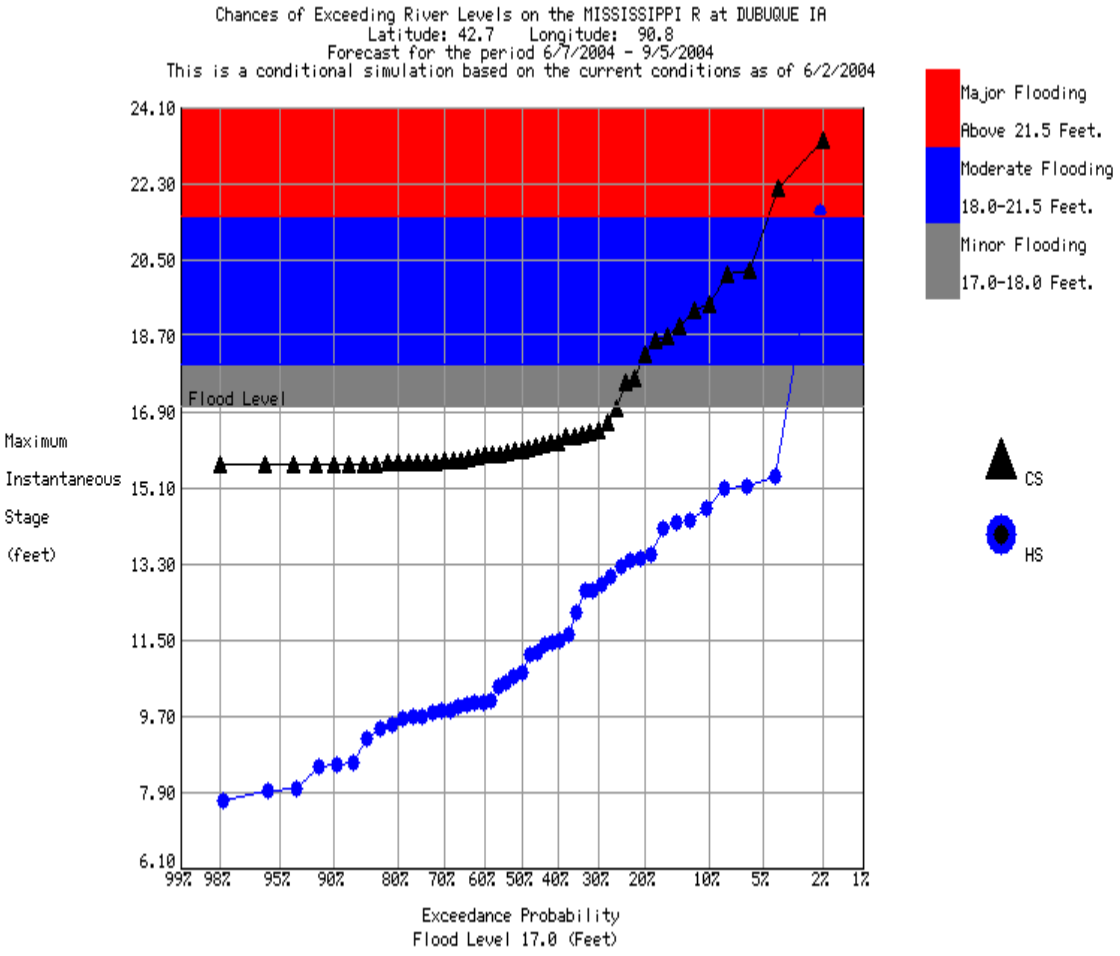
Condiciones más secas de lo “normal” en el periodo de previsión. Las posibilidades son más grandes para las condiciones secas, según se indica por la **Simulación Condiciona**, sobre una gama completa de posibles resultados.

Questionnaire – Spanish continued

Cuando las dos simulaciones están muy cerca a lo largo de la gama completa, las posibilidades de que el río suba por encima de cierto nivel son similares a la gama total de los niveles pasados.

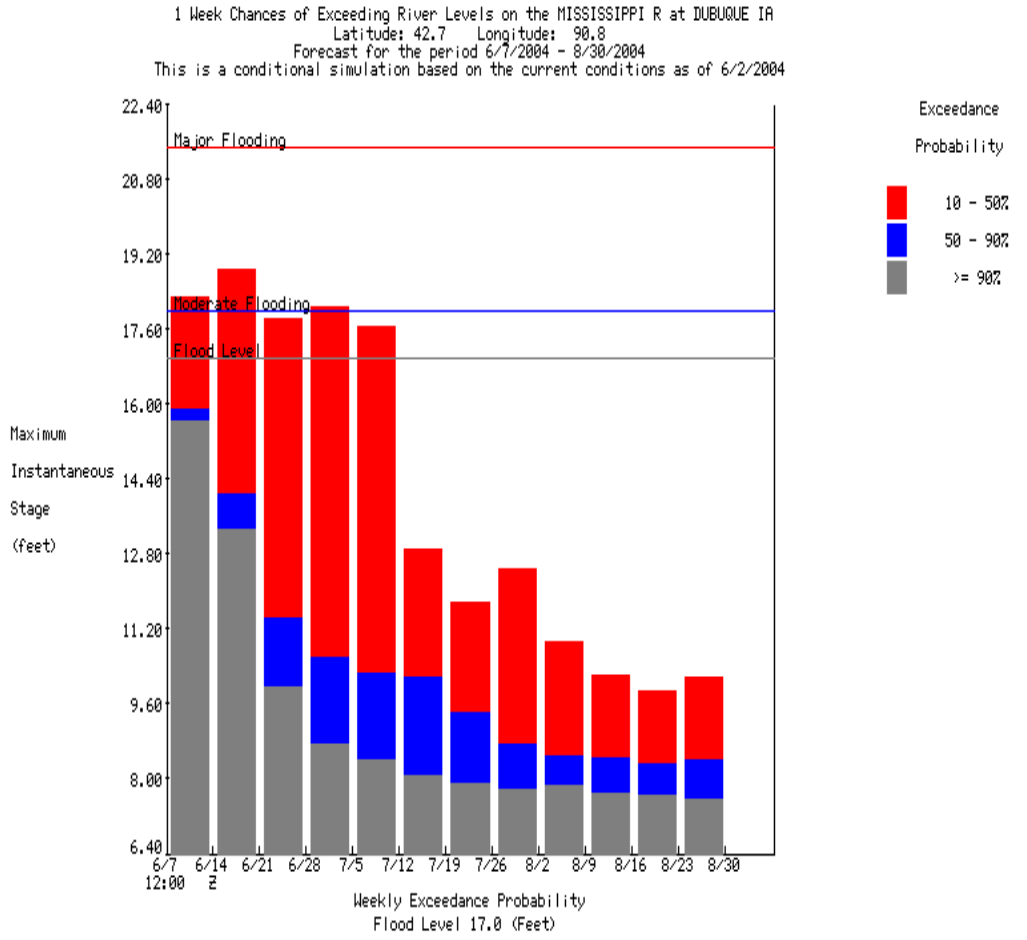
35) Ahora, utilizando una escala de 10 puntos, donde 1 significa malo y 10 excelente, por favor, califique el gráfico abajo que comunica la posibilidad de exceder la situación dada de un río durante el periodo de previsión de 90 días, con respecto a lo siguiente:

a. Atractivo visual
b. Facilidad de comprensión
c. Me dice lo que necesito saber acerca de las situaciones de los ríos durante una previsión de 90 días



Questionnaire – Spanish continued

El gráfico abajo muestra la probabilidad de que la situación máxima en un punto en un río exceda un valor particular en una previsión de 90 días. El eje vertical muestra la situación del río medida en pies (ft) y el eje horizontal muestra el tiempo. Cada barra vertical representa las probabilidades de exceso durante un periodo de 7 días. El color se utiliza para indicar los niveles de probabilidad.



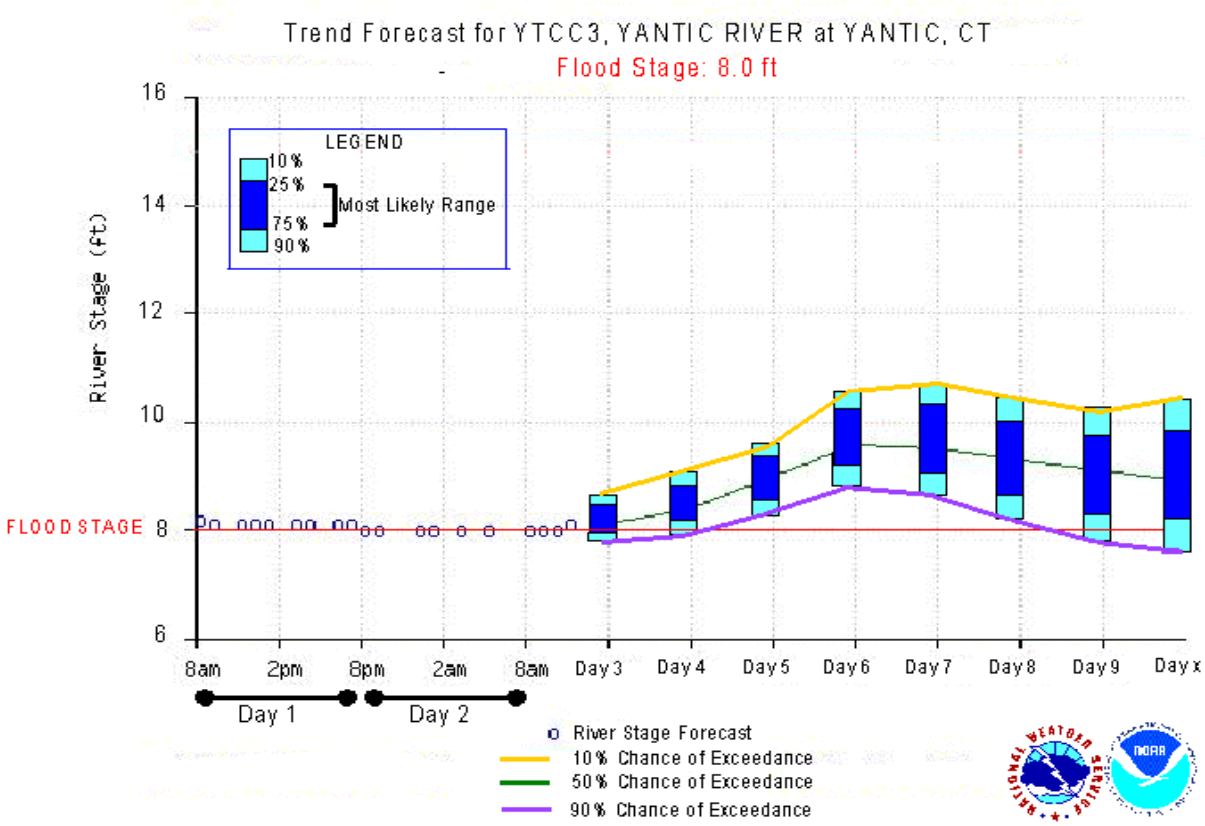
36) Utilizando una escala de 10 puntos donde 1 significa malo y 10 significa excelente, por favor califique el gráfico arriba que describe la posibilidad de exceder la situación dada de un día durante una semana determinada en un periodo de 90 días, con respecto a lo siguiente:

a. Atractivo visual
b. Facilidad de comprensión
c. Me dice lo que necesito saber acerca del estado de un río determinado durante cualquier semana determinada en los próximos 90 días

Los dos gráficos anteriores se utilizan para proporcionar información de probabilidades a largo plazo.

Para predicciones de ríos con un alcance más corto, el gráfico abajo describe una forma alternativa de comunicar información de probabilidad.

Questionnaire – Spanish continued



37) Utilizando una escala de 10 puntos, donde 1 significa malo y 10 significa excelente, por favor facilite las posibilidades de sobrepasar la situación dada de un río durante los próximos X días con respecto a lo siguiente:

a. Atractivo visual
b. Facilidad de comprensión
c. Me dice lo que necesito saber acerca del estado de un río en una base diaria

Un termino que se usa comúnmente asociado con el riesgo de inundaciones es la “inundación cada 100 años”. La inundación cada 100 años está basada en análisis estadísticos y estima el nivel de agua que se alcanzará como promedio, cada cien años. En términos de probabilidad es un nivel que tiene hasta un 1% de ocurrencia en cualquier año dado.

38) Utilizando una escala de 10 puntos, donde 1 significa ninguna utilidad y 10 significa muy útil, por favor clasifique lo útil que sería incluir un nivel de agua de 100 años para caracterizar las inundaciones en productos de NWS.

Questionnaire – Spanish continued

VII. Índice de satisfacción del cliente

Ahora por favor, piense acerca de su nivel de satisfacción total con el Programa de Servicios Hidrológicos de NWS.

39) Primero considere por favor todas sus experiencias con el Programa de Servicios Hidrológicos de NWS. Utilizando una escala de 10 puntos, donde 1 significa insatisfecho y 10 significa muy satisfecho, ¿qué tan satisfecho está usted con el Programa de Servicios Hidrológicos de NWS?

40) Considerando todas las expectativas que hemos discutido, ¿hasta que punto el Programa de Servicios Hidrológicos de NWS no ha llegado o ha excedido sus expectativas? Utilizando una escala de 10 puntos, en el que 1 significa que no ha llegado a sus expectativas y el 10 que las ha cubierto con creces, ¿hasta que punto el Programa de Servicios Hidrológicos de NWS no ha llegado o ha excedido sus expectativas?

41) Olvídese un momento del Programa de Servicios Hidrológicos de NWS. Ahora, imagine un programa ideal de servicios hidrólogicos. ¿Que tanto cree usted que el Programa de Servicios Hidrológicos se compara con el programa ideal de servicios hidrológicos que usted se acaba de imaginar? Por favor utilice una escala de 10 puntos, en la que 1 significa no muy cercano al ideal y 10 signifique muy cercano al ideal.

Questionnaire – Spanish continued

VIII. Resultados deseados

42) ¿Ha contactado usted alguna vez formalmente con el Servicio Nacional de Climatología para reportar un problema o realizar sugerencias con respecto a sus productos y servicios hidrológicos?

a. Sí
b. No **(pase a la pregunta 44)**

43) En una escala de 10 donde 1 significa malo y 10 significa excelente, por favor clasifique la respuesta de personal de NWS a su problema o sugerencia.

44) Utilizando una escala de 10 puntos, donde 1 signifique no probable en absoluto y 10 signifique muy probable, ¿qué tan probable sería que usted tomara una acción basándose en la información hidrológica que usted recibe el Servicio Nacional de Climatología?

45) Utilizando una escala de 10 puntos, en la que 1 significa no del todo confiado y 10 signifique muy confiado, ¿cuanta confianza tiene usted en que el Programa de Servicios Hidrológicos de NWS hará un buen trabajo proporcionando previsiones, alertas y avisos en el futuro?

IX. Preguntas finales

46) Por favor proporcione cualquier comentario adicional sobre los servicios hidrológicos actuales de NWS y/o sugerencias sobre cómo puede el NSW satisfacer mejor sus necesidades hidrológicas.

47) El NWS se encuentra en un programa de modernización de servicios, conocido como el Servicio de Predicción Hidrológica Avanzada (Advanced Hydrologic Prediction Service, AHPS), para mejorar la calidad de sus servicios hidrológicos. Si usted está dispuesto a contactar con nosotros para proporcionarnos sugerencias adicionales, a medida que tomamos decisiones para implementar el AHPS, por favor complete lo siguiente:

a. Persona a contactar:
b. Dirección de correo electrónico:
c. y/o
d. Número de teléfono: